BÖHNKE + PARTNER®
MEMBER OF THE SCHMERSAL GROUP

Installation Manual

System »bp308«

- General Information
- Safety instructions
- Commissioning
- EC-Type Examination

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1 General Information

1.1 Many Thanks

Fig. 1
The "bp308" control system features the latest lift technology interfaces .

Dear Customer!

Many thanks for the confidence you have placed in BÖHNKE + PARTNER GmbH by buying the »bp308«.
Please carefully read through this installation manual and the documentation of the components as improper handling might bear serious risk of injury.
Reading all hints and tips saves you a lot of time and consultations when installing the system.
Installation Manual" stands for the whole documentation that we have prepared to provide our customers with comprehensive information on our company and product range. For quick reference and overview the installation manual is clearly outlined in different sections. It deals with the dangers and risks that may result in serious injuries and costly damages created by carrying out the work incorrectly. Last but not least it provides the information required for installing and commissioning the control system.

The installation manual is supplied together with every control unit thus forming part of the entire documentation of your control system

Should you have any further questions, please do not hesitate to contact us:

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1.2 Purpose

The "bp308" control system is an equipment applied for lifts.

1.3 Documentation

This manual does not provide information on our full range of delivery options. All information exclusively serves as a product description and is not to be interpreted as a guaranteed characteristic within a legal sense. Any potential damage claims against our company − for whatever legal reason − are excluded unless we have committed an act of wilful intent or gross negligence. We do not warrant the stated circuits or processes to not be subject to third-party industrial property rights. This manual may only be reprinted − in whole or part − with the prior consent of BÖHNKE + PARTNER GmbH and subject to proper acknowledgements .
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® Both logo and company name are registered trademarks.

The information contained in this manual is checked regularly. Necessary corrections are contained in subsequent issues.

Warnings as well as special information in this technical manual are marked as follows and highlighted by the corresponding symbols.

ATTENTION!
This mark is used to point out that inaccurate observance or non-observance of the instructions or procedures may result in damages to the equipment, in injuries or fatal accidents.

CAUTION!
This warning is set if inaccurate observance or non-observance of the instructions or procedures may lead to injuries or fatal accidents by electric current.

INFO!
This highlight is used to point to special information.

2 Safety Information

Prior to installing and commissioning this unit carefully read the safety instructions and warnings and pay attention to every warning label attached to the unit. Make sure that the warning labels are readable at all times and replace missing or damaged labels.

2.1 Qualified Personnel

Qualified personnel in the sense of the documentation respective of the warnings on the appliances themselves are persons, who are familiar with the erection, installation, commissioning, operation and maintenance of the appliances and dispose of qualifications that are appropriate with the work, such as for example:

- Apprenticeship and skill and/or authorisation to switch, earth and label power circuits and appliances in accordance with the standards and safety techniques.
- Apprenticeship and skill in the maintenance and operation of the appropriate safety devices according to the standards.
- First aid training.

2.2 Safety Instructions Concerning Control Units

CAUTION!

Excerpt from the "*Merkblatt über Sicherheitsmaßnahmen bei der Montage und Instandsetzung von Aufzugsanlagen*" (ZH 1/312; Issue: 10/1983) (memorandum on safety measures to be taken while assembling and maintaining lifts) issued by "*Hauptverband der gewerblichen Berufsgenossenschaften*" (association of industrial trade cooperatives):

3.1) Notification

If a field engineer has to work alone on an lift system, he has to notify the lift attendant or any other person in the building (e.g. janitor, inhabitant) of his presence.

3.2) Blocking the lift System

Prior to starting work on the lift system block it for normal operation. At every landing door apply a label saying: "lift out of operation". Open well accesses are to be blocked in a way that unauthorized persons cannot gain access to them

3.3) Landing Controls

Prior to starting work switch off the landing controls.

3.4) Assistant Workers

If the field engineer has to execute work that requires the presence of a second person, this can be the lift attendant or any other instructed person .

3.5) Short Circuiting of Control Lines and Switches

It is prohibited to short circuit control lines and switches during the course of maintenance and inspection work. If repair work cannot be done without short circuiting control lines and switches, the bridge has to be laid with utmost care. Immediately after having completed the repair work, the bridge has to be removed again .

3.6) Switch Declaration

Temporary or verbal switching declarations are prohibited .

3.7) Work with Live Electric Components

Work with live electric components, if necessary at all, is to be executed by using isolated tools only and a substratum and appropriate personal safety equipment. The pertinent instructions of the safety regulations DIN EN 50110 part 1 and part 2 / DIN VDE 0105 part 100 "*Betrieb von elektrischen Anlagen*" (how to operate electric appliances) are to be adhered to.

3.8) lift Operation

Up to completion of the installation work, the field engineer must not operate the lift unless it is necessary.

3.9) Staying on Top of the Car

While travelling on the car roof switch the inspection switch on, if available. It is after that only that the landing door may be closed. If there is no inspection switch, an instructed assistant worker has to operate the car.

Persons staying on the car roof are allowed to enter a command and/or switch pulse for moving the car only if all persons present there have moved back behind the outlines of the car. It is prohibited to continue working during travelling .

Only those persons required for executing the work may remain on the car roof .

2.3 Assembling and Operating Requirements

ATTENTION!

- The control system »bp308« has been manufactured in line with the latest technology and is safe to operate. Risks only occur if unauthorized persons use the equipment inappropriately and not for its intended purpose.
- Error-free and safe operation of the devices is subject to appropriate transport, storage, erection and installation as well as to careful operation and maintenance.
- Refrain from any taking any action that might infringe the safe functioning of the equipment.
- Unauthorised reconstruction and changes might infringe the safe functioning of the equipment and are prohibited.
- During operation, the drive components are partly exposed to high voltages and contain moving or rotating parts. They may therefore cause severe injuries to persons or material damages in cases of unauthorized removal of necessary covers or insufficient maintenance.
- Only qualified personnel may be appointed to work on the equipment. Personnel must keep this installation manual and all product documentation handy at all times when working on the equipment and must consistently adhere to it.
- The operator must ensure that the drive unit is secured in case of equipment breakdown, as otherwise persons may be injured or material damaged.

CAUTION!

Prior to any work on the equipment, switch off the mains supply and check that the equipment is free of any residual voltage.

3 Product Certifications

EC Type Examination for SMZ04 und BPL02

3.1 General Description

The modules safety circuit SMZ-04 and power operating board BPL-02 with SMZ may only be operated in elevator controllers together with the system modules bp115, bp117, bp300, bp302, bp304, bp306 and bp308.

After complying with these conditions the safety module can be used in the following cases

- Electrical safety devices pursuant to TRA 261 and DIN EN 81 part 1 and part 2 No. 14.1.2.3 as substitute for mechanical positive switches.
- Circuits with safety features: time delay operation circuit on shortened buffer stroke TRA 262.53 and DIN EN 81 part 1 and part 2 no. 12.8
- Levelling and adjusting with opened car and landing door TRA 265.1 and DIN EN 81 part 1 and part 2 no. 14.2.1.2.
- Docking operation TRA 266.3 and DIN EN 81 part 1 and part 2 no. 14.2.1.5

Recognition of an unintentional movement of the car with open door pursuant to EN 81-1/-2, section 9.11.7 and 9.13.7

3.2 EC Type Test Certificate BPL 02 with SMZ

Fig. 2
System module
bp117/304/306/bp208/bp308
as subsection of BPL- 02
Circuit board

Requirements of
Directive 95/16/EC

EN 81-1:1998+A3:2009
EN 81-2:1998+A3:2009

Registration no.
01/208/5A/1103/1644Ae5

from 09th September 2013

TÜVRheinland®

ZERTIFIKAT
CERTIFICATE

EC Type-Examination Certificate

Reg.-No.: 01/208/5A/1103/1644Ae5

Product tested	- Safety circuit, - Electronic monitoring circuits	**Certificate holder**	BÖHNKE + PARTNER GmbH Steuerungssysteme Industrieweg 13 51429 Bergisch Gladbach Germany
Type designation	Subarea of the printed circuit board BPL-02 of the system modules bp117, bp304, bp306, bp308 and bp208	**Manufacturer**	see certificate holder
Codes and standards forming the basis of testing	Directive 95/16/EC EN 81-1:1998 + A3:2009 EN 81-2:1998 + A3:2009		
Intended application	For use in passenger lifts and goods passenger lifts. Safety circuit for - bridging of the door switch and the locking element switch during levelling and re-levelling with doors open acc. to EN 81-1/-2, clause 14.2.1.2 a) 2), - detection of an uninteded car movement with open doors acc. EN 81-1/-2, clause 9.11.7 and 9.13.7 respectively. Electronic monitoring circuits for feedback-free monitoring of the lift installation's safety chain switching status acc. to EN 81-1/-2, clause 14.1.2.1.3.		
Specific requirements	The instructions of the associated Installation and Operating Manual and the Annex to this certificate shall be considered.		
It is confirmed, that the product under test complies with the requirements for lifts defined in the EC Directive 95/16/EC.			
This certificate is valid until 2018-09-09.			

The issue of this certificate is based upon an examination, whose results are documented in report-no.: 968/A 121.02/13 dated 2013-09-09.

This certificate is valid only for products which are identical with the product tested. It becomes invalid at any change of the codes and standards forming the basis of testing for the intended application.

TÜV SÜD 0035 Notified Body

Köln, 2013-09-09

Certification Body for Lifts and their Safety Components, NB 0035

Dipl.-Ing. Volker Sepanski

Annex to EC Type-Examination Certificate Reg.-No. 01/208/5A/1103/1644Ae5 dated 2013-09-09

1. Component	- Safety circuit - Electronic monitoring circuits		
2. Manufacturer	Böhnke + Partner GmbH® STEUERUNGSSYSTEME Industrieweg 13 51429 Bergisch Gladbach Germany		
3. Designation / Type	Subarea of the printed circuit board BPL-02 of the system modules bp117, bp304, bp306, bp308 and bp208		
4. ID-No. / Marking on the component	01/208/5A/1103/1644		
5. Area of application	For use in passenger lifts and goods passenger lifts		
6. Intended use	Safety circuit for - bridging of the door switch and the locking element switch during levelling and re-levelling with doors open acc. to EN 81-1/-2, clause 14.2.1.2 a) 2), - detection of an unintended car movement with open doors acc. to EN 81-1/-2, clause 9.11.7 and 9.13.7 respectively. Electronic monitoring circuits for - feedback-free monitoring of the lift installation's safety chain switching status acc. to EN 81-1/-2, clause 14.1.2.1.3.		
7. Characteristics			
7.1 Characteristics safety circuit	Output voltage range:	0 - 250 VAC	
	Fuse protection of the output circuit:	max. 4 A	
7.2 Characteristics monitoring circuits	Input voltage:	max. 250 VAC	
	Neutral lead:	9 (NN), 14 (NF)	
	Input current per monitoring circuit:	ca. 3.45 mA	
7.3 Common characteristics	Pollution degree:	3	
	Material group:	IIIa	
	Protection degree:	IP > 43 (to be ensured by housing/enclosure)	
	Operating temperature:	0…+60°C	
	Further technical data see operating manual of the component BPL-02 of company BÖHNKE + PARTNER® GmbH Steuerungssysteme.		
8. Maintenance	The correct operation has to be checked periodically.		
9. Installation	- The specifications in the operating manual for the installation, commissioning, as well as operation of the component BPL-02 have to be considered. The relevant national regulations and the EN 81-1/-2 have to be followed on installation. - By the selection of an appropriate installation place it has to be ensured that environmental influences like water, conductive dust and condensation don't have a negative impact on the safety-related operation of the component. - The connected sensor elements of the safety chain must satisfy the requirements of EN 81-1/-2. - The return wire to the coils of the safety-relevant contactors must run according to the specifications of the operating manual from terminal 9 (NN) to terminal 14 (NF) across the board and must be connected to terminal 14 (NF). The N-wire from the safety-relevant contactors to the component BPL-02 must not have any further connection to		

Annex to EC Type-Examination Certificate Reg.-No. 01/208/5A/1103/1644Ae5 dated 2013-09-09

	N-wires of the remaining control system. - On the installation an EMC-compatible wiring has to be ensured.
10. Specific conditions	In line with the commissioning and the recurring checks of the lift the following checks have to be performed: - Check of the correct installation - Check of the hardware version - Check of the safety function according to the inspection instructions in the operating manual - Check of the N-wire interruptions of the monitoring circuits according to the inspection instructions in the operating manual Specific conditions for the safety function „Detection of an unintended movement of the lift car with open doors" acc. to EN 81-1/-2, clause 9.11.7 and 9.13.7 respectively: - The retention of the tripped state of the protection means - even beyond the interruption of the power supply - has to be performed by an additional measure outside of the safety circuit. - As tripping time of the safety circuit for the detection of an unintended movement **10 ms** have to be considered. Response times of upstream sensors (e.g. zone switch) and downstream actors (e.g. disengaging device, equipment for stopping holding the lift car9 are not contained herein and have to be considered separately.

3.3 EC Certification bp308

(95/16E/G): 01/208/5A/1103/1644Ae5

Named location, ID no 0035

3.3.1 Declaration of Conformity with EC Directive

(95/16/EG)

BÖHNKE + PARTNER®
MEMBER OF THE SCHMERSAL GROUP

EU-Declaration of conformity

as in the EU-Regulation (95/16/EU)

We hereby declare that the following products:

Component group	Part of the printed circuit(s)	Number of certificate according to 95/16/EU
SMZ-03		09 208 92602 / 5
Systemmodul bp115	BCL-01	09 208 92603 / 5
Systemmodul bp302	CLP-03	09 208 92604 / 5Ae1
Systemmodul bp300	CCP-01	09 208 92605 / 5
FDG-02	FDG2-B, FDG2-E	09 208 92606 / 5
Systemmodul bp117/bp304	BPL-01	09 208 92612 / 5
Systemmodul bp117/bp304/bp306/ bp308/bp208	BPL-02	01/208/5A/1103/1644Ae5
SMZ-04		01/208/5A/0408/1770Ae1
FDG-03	FDL-01	01/208/FWB/B/0106/1311Ae1
Systemmodul bp119	LMC-SB-51	01/208/5A/6007/13

from build year 1999, conform to the composition requirements for elevators (95/16/EG) as set out in the guidelines of the board to harmonise the legal regulations of the member states. This declaration is only valid for the above-mentioned products, when these are installed in elevator systems.
This document becomes invalid as a consequence of unauthorised amendments to our products.
Attention must be paid to the manuals supplied.

The appropriate component- or construction type tests were carried out by: TÜV Rheinland, Safety and Environmental Protection GmbH.
The EG type approval certificates and the conformity certificates with the EG certificate numbers are issued by TÜV Rheinland/Berlin-Brandenburg, sect. Conveyance Technology (notified body 0035).

This declaration is given by Joachim Ramrath for

BÖHNKE + PARTNER GMBH
STEUERUNGSSYSTEME
Industrieweg 13
51429 Bergisch Gladbach
Federal Republic of Germany

in the name of the management

Bergisch Gladbach 19th of September 2013

(Joachim Ramrath, Member of the management)

Formular-Nr.: QFB_Konformitaetserklaerung_bp-Systemmodule_EG-RiLi_Engl.DOC ; Stand: 15.Dezember 2011

3.3.2 Declaration of Conformity with EC Directive (2004/108/EG) / EN 12015+EN 12016

EU-Declaration of conformity

as in the EU-Regulations (89/336/EEC, amended by 92/31/EEC) and EN12015 and EN12016

We, hereby declare that the following product

Control unit

Identification:
Elevator control system (control cabinet), bp115, bp117, bp300, bp302, bp304, bp306, bp308, bp208, bp119

accords with the protective demands to harmonise the legal regulations of the member states with regard to electro-magnetic compatability (89/336EEC; amended by 92/31/EEC) as laid down by the committee and EN12015 and EN12016
This declaration is valid for products which are part of this declaration and which are produced according to the attached documentation.
This document becomes invalid as a consequence of unauthorised amendments to our products.
Attention must be paid to the manuals supplied.
The appropriate tests were carried out by the following laboratories: TÜV Berlin-Brandenburg, BZT Kolberg und TÜV Rheinland.
The evaluation of conformity was carried out by the appropriate authority: TÜV Rheinland Product Safety GmbH.

The certificate of the bp115 has the registration number: AV 9711203 01
The certificate of the bp117 has the registration number: AV 2110188 01
The certificate of the bp300, bp302 has the registration number: AV 9611109 01
The certificate of the bp304 has the registration number: AV 2010741 01
The certificate of the bp306 (71W-power-supply) has the registration number: 21121247_001
The certificate of the bp306 (130W-power-supply) has the registration number: 21122666_001
The certificate of the bp308 has the registration number: P10-Z-00387-001
The certificate of the bp208 has the registration number: P10-Z-00387-001
The certificate of the bp308 has the registration number: 13057

This declaration is given by Joachim Ramrath for
BÖHNKE + PARTNER GMBH
STEUERUNGSSYSTEME
Industrieweg 13
51429 Bergisch Gladbach
Federal Republic of Germany
in the name of the management.

Bergisch Gladbach, den 20th of September 2013

(Joachim Ramrath, Member of the management)

Formular-Nr.: QFB_Konformitaetserklaerung_bp-Systemmodule_EMV-RiLi_Engl.DOC ; Stand: 19.05.2011

4 Standards

TIPS REGARDING OTHER REGULATIONS AND RISKS

- The procedural tips and excerpts from circuit diagrams given throughout the technical documentation are to be applied mutatis mutandi, i.e. to be checked for every application. BÖHNKE + PARTNER does not accept any liability for their individual suitability.
- To ascertain proper functions of the complete control system, you must comply with the documentation of the manufacturers of third-party components, which are supplied to you as well (e. g. operation instructions for the frequency inverter).
- The control system bp308 must exclusively be used for processing information in elevator control systems.
- Control units, printed circuit boards, modules or other devices that have been damaged on their transport to you must not be used or commissioned.
- Printed circuit boards comprise electro-statically damageable elements. Therefore, before touching any electronic component make sure that your own body has been discharged. You can do this by touching a conductible earthed object (e. g. bare metal parts of the control cabinet).

4.1 EMC-Directives

All industrial, electronically controlled devices, such as, for example, PCs, microprocessors, computers, SPSs, can be influenced by interference pulses if they have not been protected accordingly. These interference pulses can be caused by external appliances, such as e. g. voltage fluctuations in the feed-line or control pulses of the power parts in the frequency inverter. BÖHNKE + PARTNER have taken all usual measures while manufacturing the control unit. The installed components are only slightly sensitive to interferences from their environment.

ATTENTION!

- Follow the EMC instructions given by the manufacturer of the frequency inverter at all times !
- Should you have any question concerning the EMC Directive please ask our service team .
- Please also pay attention to the tips concerning interference suppressing measures given in this manual.

4.2 EN 81

EN 81-2 regulations :
We providently point to the fact that BÖHNKE + PARTNER do not accept any liability for damages that might be traced back to the adherence to EN 81-2 regulations! Example: Re-levelling of a hydraulically operated elevator even in case that the runtime monitoring has responded due to a phase failure.

5 Control System »bp308«

5.1 Description of the Product and its Functions

The control system bp308 is an electronic component for the control of lifts. Different designs are available, with safety circuit interrogators for different voltages and different power units with varying outputs, with or without integrated safety/protective circuit.
Basic functions of an lift control unit, such as a stabilized power unit, safety circuit interrogator and safety circuit have consistently been integrated in the control system bp308.

The control system bp308 is a decentralized microprocessor system with distributed »intelligence«. The decentralized components are linked to the unit via its two CANopen interfaces as a standard, pursuant to the international standard. CANopen CiA-417 (www.CANopen-Lift.org). There are further interfaces for older protocols common in the lift industry.

Fig. 3
The "bp308" control system features the latest lift technology interfaces .

The control system bp308 is composed as follows:

- Stabilised, primarily clocked power unit with 2 voltages
  5 V DC 2 A (internal only),
- 24 V DC 2.2 A (at the terminals),
- Power Fail recognition 150 VAC,
- Emergency light 12 V, 600 mA, total discharge protection at 10 V,
- Pre-control,
- Safety circuit interrogator,
- Safety/Protective circuit (optional),
- Freely programmable inputs, outputs and relays,
- Electronically monitored standard inputs and outputs as well as interfaces for:
- The selection of the frequency inverter with DCP3 and DCP4+ interface,
- Absolute encoders of different makes and technologies,
- Data remote diagnostics with WinMOS®300 per Bluetooth™, WiFi, modem USB) or Ethernet,
- Building automation per EIS protocol, LONworks standard, OPC, Modbus or Profibus DP.
- CANopen CiA-417- components,
- LAN for remote diagnostics and monitoring,
- USB laptop connection for diagnostic purposes and software updates,
- USB host for USB sticks, modems, Bluetooth™ or WiFi adapters,

- Memory card slot for software updates, log files, and parameter backups.

Based on these concentrated functions and the conception of decentralized control, small control cabinets can be used. The standard control cabinet for the control system bp308 is 600 x 600 x 250 mm and thus intended for lifts with limited space only.
In combination with the data remote monitoring system WinMOS®300 ®300 (www.WinMOS.de) it can significantly increase the availability of the lift. In addition, this system allows you to completely match the service intervals to the requirements

5.2 Summary of the Functions of bp308

- Controls of a single lift
- Controls of a bank of 8 lifts without group computer
- 128 landing settings
- SFS – automatic push button control
- SFR – automatic push button control with landing call memory (»Taxi control«)
- 1KS – 1-button collective control
- 1KSab – 1-button down collective control
- 1KSauf – 1-button up collective control
- 2KS – 2-button up and down collective control
- Operating data logs: travels, operating hours, malfunctions, messages
- Rope traction lift: pole changing, one speed, two speeds, frequency inverter, Ward Leonard drive
- Hydraulically operated lift: star-delta and direct start, valve control, soft start, frequency inverter
- Positive temperature control of drive motor, integrated
- Safety circuit, integrated (230 V AC standard, 48 V DC optional)
- Main contactor selection 230 V AC, integrated
- Safety circuit type SMZ-04, integrated
- Internal primarily clocked, stabilised and short circuit resistant mains power pack with terminal connector to the control unit
- Inputs and outputs for every standard application, integrated
- Inputs and outputs expandable in steps r
- Positive circuitry (24 V DC)
- Outputs overload protected
- Diagnostics of inputs and outputs suitable for diagnostics by LCD or laptop

- Diagnostics and configuration of the CANopen components using the CANwizard®
- Operator guidance using a laptop with WinMOS®300

- Operator guidance using 7 keys and illuminated graphic LC display
- Parameter setting on site using the LCD, mobile phone, Bluetooth or laptop
- Parameters safely memorised in EEPROM (2 complete data sets)
- Real-time clock integrated
- Setup menu separate from service menu
- Code lock can be set separately
- Menus provided in German, English, Dutch, and Swedish
- Integrated interfaces for DCP, LAN, USB and CANopen
- Optional remote diagnostics via modem (USB) or LAN
- Different codes possible for landing signals and direction indicator (Gray, binary, user-specific)
- Zero load, full load and actual load in kg
- Direction indicator, landing gong, selecting landing door as well as direction of travel
- Home landing adjustable
- Fire emergency landing and emergency power landing adjustable
- Monitoring and waiting landing adjustable
- Fire brigade landing adjustable
- Parking programs adjustable by LCD
- Door tables A, B and C externally switchable
- Magnet switch selector with 4 and 6 switches
- Absolute encoding selector with AWG-05 executed in CANopen
- Next landing and short landing distance up to 15 mm (with absolute encoding only)
- Selective landing calls for door sides A, B and C
- Priority landing calls with two stages (low and high position)
- Door selection for sides A, B and C (all door operators)
- Doors adjustable to different times and functions
- Zone module (SMZ04) for doors starting to open during landing approach and for re-levelling)
- Door locks on side A, B or C separately selectable by lockage control
- Service intervals settable in relation to travels, hours and date
- Malfunction stack memory of up to 128 messages (type of malfunction, landing and time (date and hour) as well as signal map)
- Malfunction list (type, landing and frequency)
- Batch memory of up to 128 important messages
- Monitoring possible with laptop on site
- Remote fault diagnostics possible with WinMOS®300 via modem or LAN
- 2 relays, freely programmable with one normally closed contact
- 2 relays, freely programmable with one normally open contact
- 4 relays, freely programmable with one double throw contact for, e.g., door A and door B for electronic door control units

- Company logo (text) programmable on LCD
- Landing names (text) programmable
- Optional guest operation, chemical operation, docking service, earthquake operation and other special function can be purchased.
- RoHS compliant production (lead free)

5.3 Decentralised Lift Control

The bp308 is a decentralized control system, i.e. the »intelligence« is distributed on the linked devices and does no longer exclusively take place in a centre unit. This decentralized lift control is based on the CANopen application profile CiA-417 (www.CANopen-Lift.org). It is via this globally standardized application profile that the different components of the lift bank communicate. The linked components have a complete functional scheme each and are thus in a position to make many decisions themselves. This profile enables open modular systems that can assume very complex control tasks.

5.4 The Group System

The up-to-date group control system is equipped with a powerful 32-bit processor able to evaluate a large variety of information from the entire lift group within the shortest time and on this basis make the decisions for the group operation.
The group control system guarantees the smooth operation of a group of two to eight lifts, based on the CANopen-based application profile CiA-417. All data and commands for all components are provided on the bus in compliance with the standards. Each group computer is thus able to decide on its own in which sequence and by which group member the individual calls should be ideally processed. The group function does not require a master computer but one may be used optionally to expand group performance by certain special functions such as the load-related evacuation of all lifts within one building when using emergency power or in the case of fire or the automatic static evaluations for determining group parameters .
Landing calls are entered via bus nodes that may be located in the landing call unit or in the control cabinet. These nodes evaluate the signal received and make it available to all group members at once on the CAN Bus − as a message that states direction, priority, destination etc.).
Landing calls are entered via bus nodes that may be located in the landing call unit or in the control cabinet. These nodes evaluate the signal received and make it available to all group members at once on the CAN Bus − as a message that states direction, priority, destination etc.
If an lift no longer participates in group operation because it has been switched to inspection mode during maintenance work, for instance, the other group members receive this information immediately so that it can be taken into account in the calculations. If several lifts are able to answer a call at the same time, the lift that has been standing still

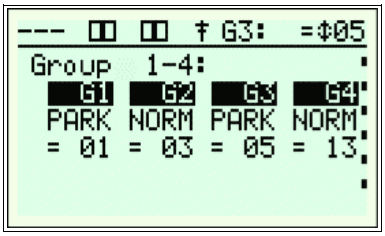


Fig. 4
Group status in bp308

the longest picks up the call. If the standing times are also the same, the rule G1 before G2 applies.

The following states are taken into consideration for aspects such as the group algorithm:

- Distance to target landing
- Opposite travel/call direction
- Llift is stopped or running
- Number of interim stops on route
- Lift cabin call on the target landing
- And others.

5.4.1 Priority Calls

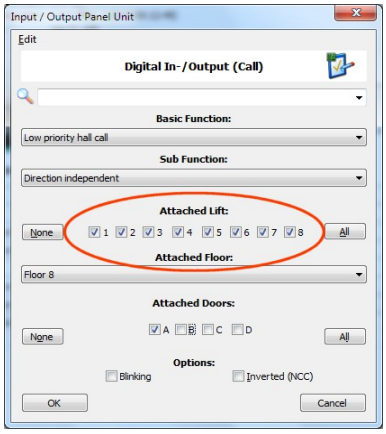


Fig. 5
Setting the priority landings

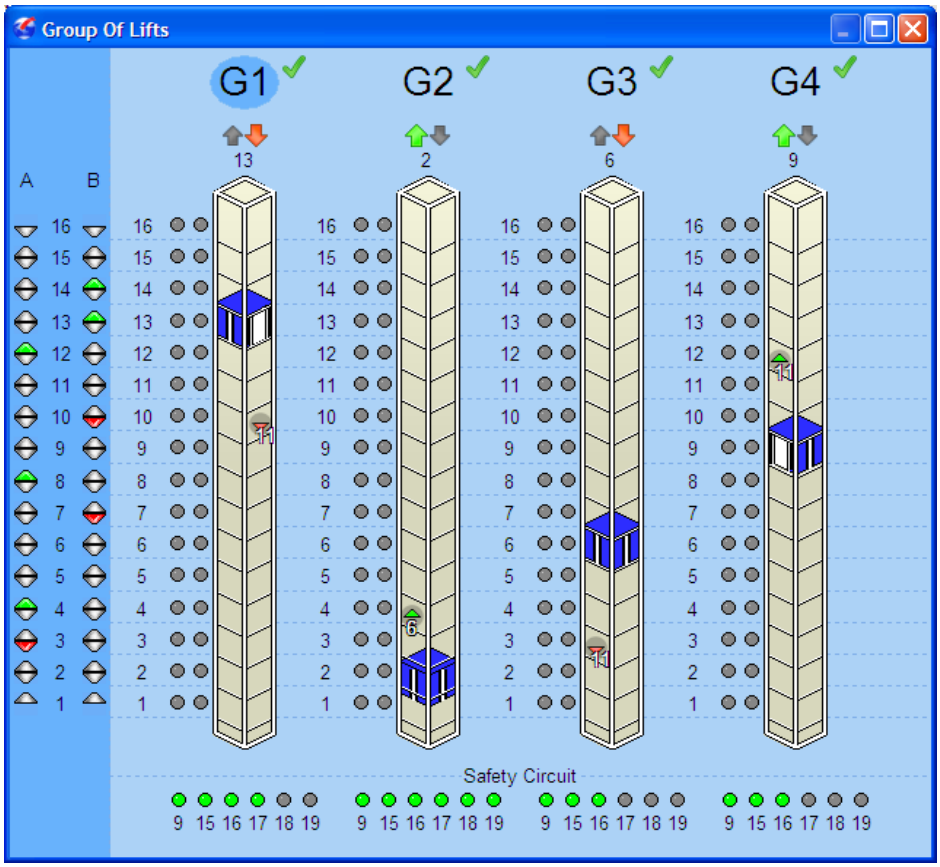
When setting priority calls on the BPC itself or a CANopen component such as CAP-01/02 or CIO-01, it is stated which lifts should answer the priority call. The most effective of the selected lifts (see illustration) then answers this call. Two further options, "collect priority calls" and "several priority calls per landing" in the group setting of the service menu make it possible to call further lifts if one is already answering the priority call on the landing on which the standby delay is running. This option is intended for bed transports, for instance. A high priority landing call cancels a low priority landing call. Otherwise, the same rules apply for the high priority landing call than for the low priority landing call.

5.4.2 Group Display in WinMOS®300

WinMOS®300 provides an optional group data view in both "Diagnostics" and "Monitoring" mode. In the case of the bp308, the target floor of the current lift call is displayed on the group panel of the lift well. The call's ETA (estimated time of arrival) is also dynamically displayed on the panel. This can change at any moment − e.g. when the call situation changes. Priority landings are displayed with a special symbol that also shows if the call has a high or low priority.
This function makes it easier to trace the processes within one group controller.

Fig. 6

Illustration of the dynamic call allocation of a group controller in WinMOS®300 for the controller system bp308



5.5 Components of the bp308

BÖHNKE + Partner can supply the following components for the control system bp308:

- Landing call unit CAP-01/02
- Landing call unit CIO-01
- Car operation unit CLK-03
- CAN data communication gateway CDG-01
- CAN-Serial-Interface CSI-01

Further components from different manufacturers, such as, for example, absolute encoders or push button units complying with the standard CiA-417 are available and may be used .

A list of CANopen components available and their descriptions can be accessed at www.CANopen-Lift.org.

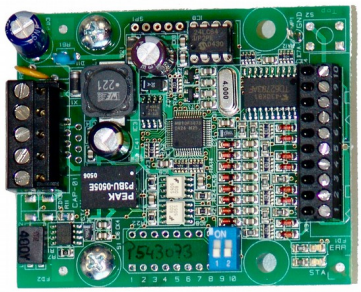


Fig. 7

Printed circuit board CAP-01/02 connecting landing calls to the CANopen bus .

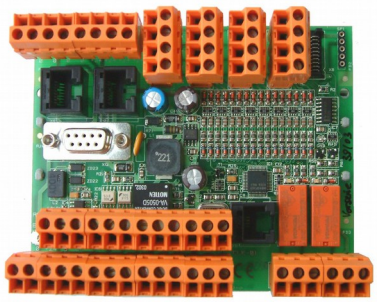


Fig. 8
Printed circuit board CLK-03 connecting the car electronics to the CANopen bus.

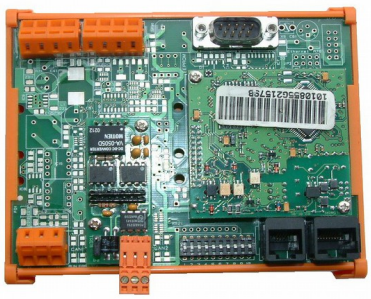


Fig. 9
Printed circuit board CDG-01 serving as a gateway between CANopen networks or for data remote diagnostics .

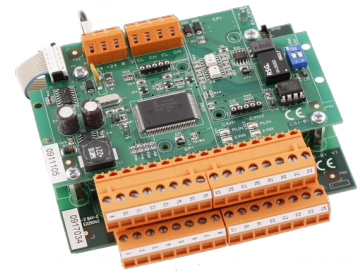


Fig. 10
Printed circuit board CIO-01 connecting 32 inputs/outputs or calls.

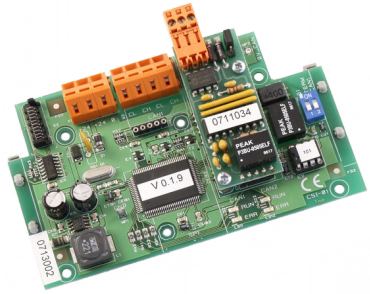


Fig. 11
Printed circuit board CSI-01 for use as a gateway or repeater.

5.6 Variants of bp308

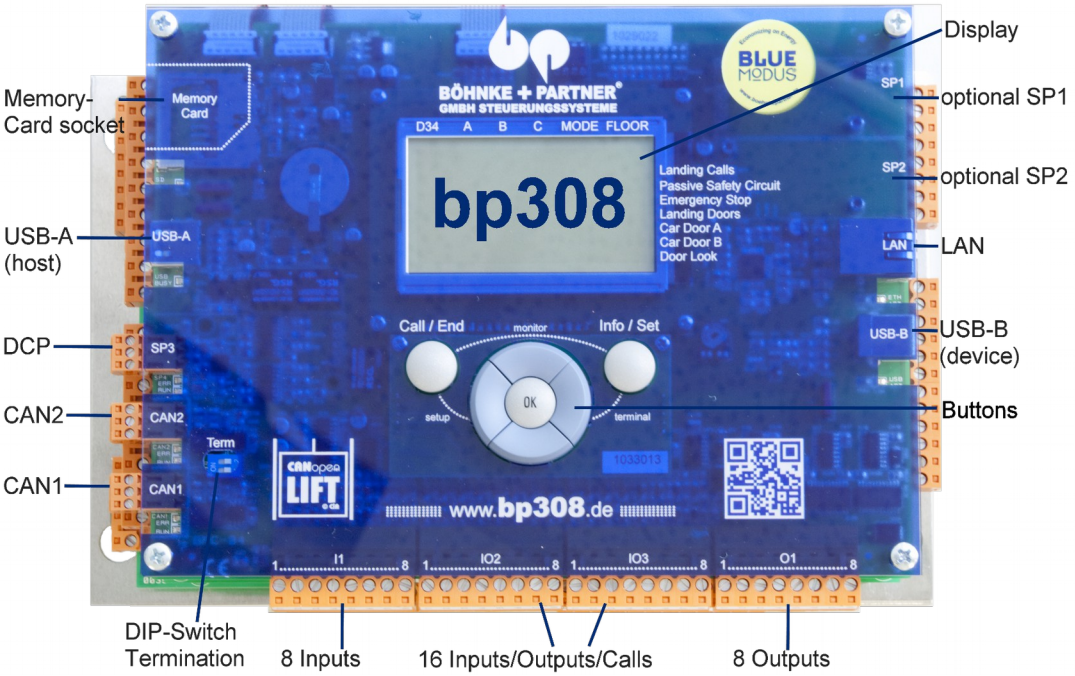
This installation manual refers to all variants of the control system bp308, as mentioned in the following list stating the abbreviations and their meaning:

SMZ = Safety circuit (safety module zone)
24 V = Option 24 V safety circuit query
48 V = Option 48 V safety circuit query
110 V = Option 110 V safety circuit query

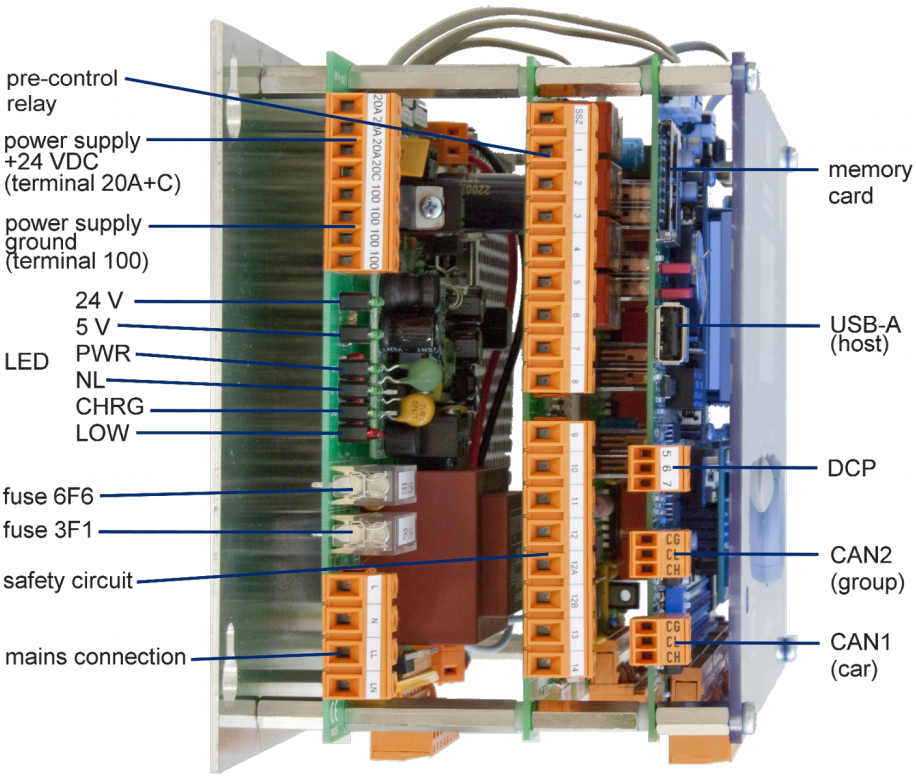
Order Number	Version
382-308-010-aaa	bp308 Standard
382-308-010-aab	bp308 with 48 V
382-308-010-aac	bp308 with SMZ
382-308-010-aad	bp308 with 48 V and SMZ
382-308-010-aaf	bp308 with 110 V and SMZ
382-308-010-aah	bp308 with 24 V and SMZ

5.7 Brief Description bp308

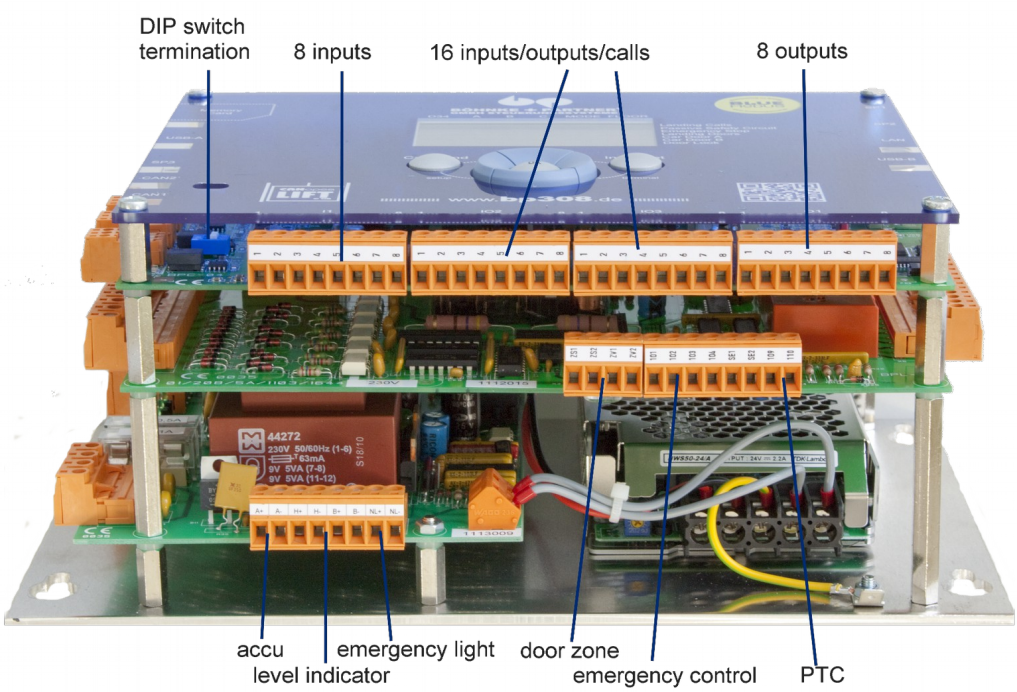
5.7.1 Top Shot



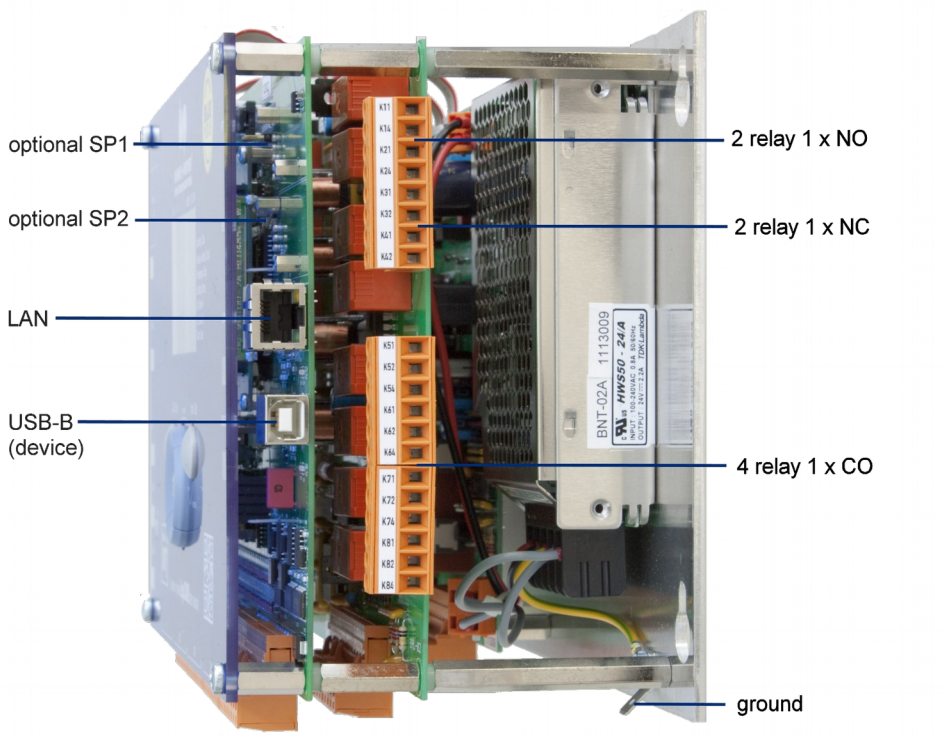
5.7.2 Left Side View



5.7.3 Bottom Shot



5.7.4 Right Side View



5.7.5 Operator Panel and LCD of the bp308

The operational status of the lift can be determined and parameters set in the control unit and the attached CANopen devices with the help of the graphic LC display and operator panel .

5.7.5.1 Standard View

Once the system has been switched on and is operating normally, the standard view appears on the display if no special menu has been called up. This view provides a quick overview of the current lift status as well as individually configurable information .

The LCD displays this information as a standard:

- Lift status bar
- Safety circuit status bar
- B+P« logo (or customer-specific logo)
- Board and cabinet temperature (optional),
- Status of internal buffer battery
- Current system time
- Depending on configuration:
  - Current malfunctions and messages
  - Last malfunction

Fig. 12
Display and buttons of the bp308. Illustration shows two doors A and B .

- Statistical information
- Current lift speed

5.7.5.2 Lift Status Bar

The lift status bar is shown in the top half of the display in all menus. It provides the following information:

- Pre-control (Relay K1-K4)
- Doors A/B/C with limit switches and reversal signals (photo-cell, door open« push button)
- Mode (e.g. status safety circuit status)
- Position information (flush-level control) +/ =/ -
- Signalisation of travels
- Car position

Fig. 13
The lift status bar is displayed in all menus.

5.7.5.3 Safety Circuit Status Bar

The safety circuit status bar is on the right side of the display in all menus. It provides the following information:

- Landing control status (on/off)
- Safety circuit status (terminals X 5.9/.16/.17/.18/.19)

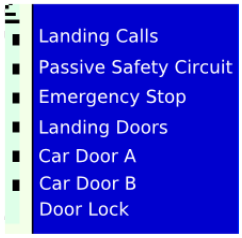


Fig. 14
The safety circuit status bar is displayed in all menus.

5.7.5.4 Operator Panel

The operator panel is at the bottom of the display. It has 7 buttons that are used for navigating through the various menus, displaying status information and changing parameters.
The operator panel buttons »Up«, »Down«, »Left«, »Right« and »OK« are arranged as a central navigation block. The »Call/End« button is on its left and the »Info/Set« button on its right.

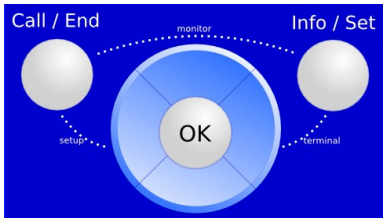


Fig. 15
Use the buttons on the operator panel to navigate through the menus.

5.7.6 Service Menu

Parameters and times that are not safety-relevant and may be changed during system operation such as door times, BlueModus energy saving functions on/off etc. can be set in the bp308 service menu.

5.7.6.1 Starting the Service Menu

The display automatically switches to the service menu when pressing the »Ok« button. If a service code (secret number) has been set, the correct code has to be entered. BÖHNKE + PARTNER do not preset any service codes by default.

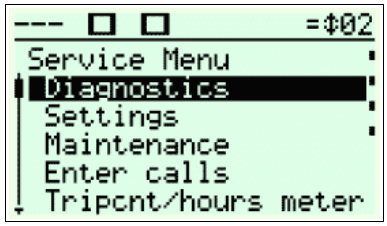
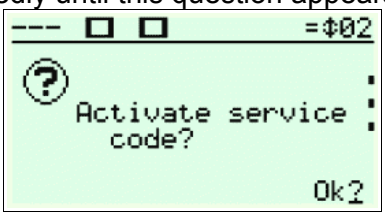


Fig. 16
The bp308 service menu

After that you can call up all service menu sub-menus and parameters and change them during the normal operations. If the control unit is to be re-encoded after leaving the service menu, please press the button »left« repeatedly until this question appears on the LC display:



Confirm by pressing »Ok«. A short notice appears:

Service code activated

Then you are back in the bp308 start menu .
The service code can be changed or reset at any time in the service menu under SUNDRIES > ACCESS CODES > SERVICE CODE .

5.7.7 Setup Menu

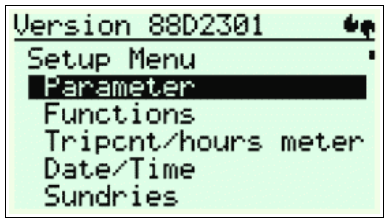


Fig. 17
The bp308 setup menu

The setup menu comprises basic parameters that cannot be changed during normal operations, e.g. traction or hydraulic lift, number of stops, etc .

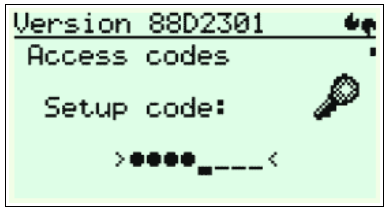
5.7.7.1 Starting the Setup menu

To get into the basic menu, proceed as follows:

- Ensure that no persons are inside or on the car and that the system can be switched off without any risk.
- Push down and hold the left »Call/End« button and quickly push the »left« button.

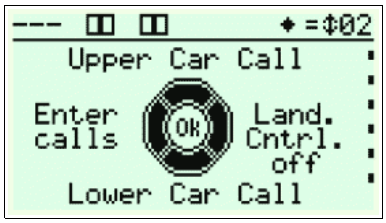
A short notice appears:

> Entering the setup menu... <



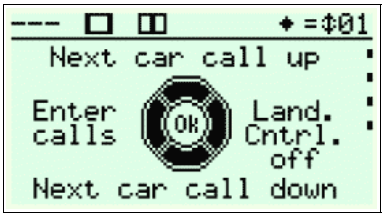
You are now in the setup menu and all control functions are switched off! If a service code (secret number) has been set, the correct code has to be entered. BÖHNKE + PARTNER has preset it to >5061<.
Once the correct code has been entered you can call up all menus and parameters and change them. To leave the setup menu quickly press the left »Call/End« button again.

5.7.8 Call Menu

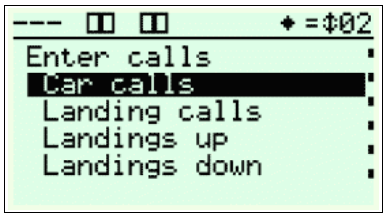


▲ Fig. 18
The symbol for the bp308 call menu is a diamond in the lift status bar .

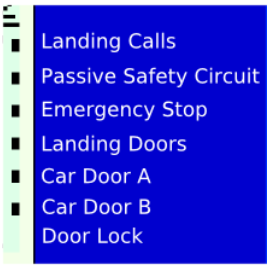
From the service menu you can access the call menu directly by pressing the »Call« button. The active menu is indicated by a diamond symbol in the lift status bar.
In the call menu, you can make a cabin call to the top or lowest stop with one click.



By clicking the OK button, the targets switch from *cabin call top/bottom* to *next cabin call top/bottom*. Now you can make a cabin call to the next stop of the current car position in an upward or downward direction. You can also select between *door open or close* with another click in the call menu (optional).
If you want to send cabin or landing calls to specific landing, you can call up the *Make calls* dialogue by clicking on the »Left« button where you can select the required call type and make calls to the respective landings and doors.

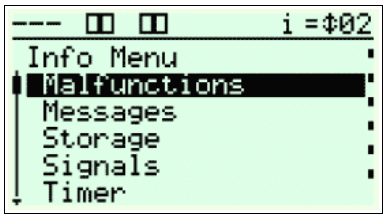


▲ Fig. 19
The lift can be sent to specific landing with the *'Call'* dialogue.



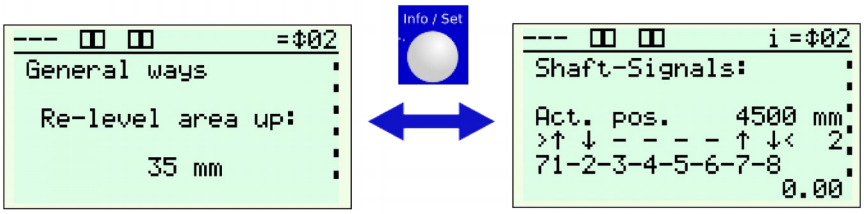
When in the call menu, you can activate or deactivate the landing control by clicking the »Right« button. The current landing control status is always displayed in the safety circuit status bar as a dot before the text *Landing Calls*. If a dot is showing, the landing control is active and you can make landing calls .

5.7.9 Info Menu



▲ Fig. 20
You can quickly switch between two sub-menus in the info menu.

In the info menu you can switch between two menu points with the click of one button. You can use this option to change service menu parameters or make calls and view the system reactions such as travel signals with just one click.
Click the Info/Set button once to access the info menu. When the menu is active, an "i" is displayed in the lift status bar and you can navigate through the menu. Another click takes you back to the menu point at which you activated the info menu. You can now switch between the two menus with the click of one button.



5.7.10 Terminal-Mode

A method for components attached to the CAN bus sending the contents of their displays to the bus and for other devices to display this content and to navigate through it using the menu of a third-party device has been specified in the *CANopen CiA-417 Lift control* application profile.
This method has been integrated in the control system bp308 and is available in terminal mode.
You can switch to terminal mode by pressing the Info/Set and »Right« button at the same time. The bp308display now shows the menu of an attached third-party device. The navigation buttons »Up«, »Down«, »Left«, »Right, »OK«, and »INFO« are now sent to the remote device.
Terminal mode is ended by clicking the »CALL« button and the last bp308 menu point is displayed again.

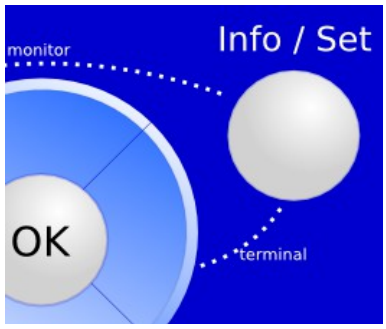


Fig. 21
Terminal mode is accessed by pressing the Info/Set and Right buttons at the same time.

5.7.11 Monitor Program LPCmon

You can use the *'LPCmon'* monitoring program to query the lift software program version and update the system software. This process should only be carried out by instructed personnel upon request by BÖHNKE + PARTNER GmbH.

5.7.11.1 Starting the Monitoring Program

To access the bp308 monitoring program, first ensure that no persons are inside the car and that deactivating the system cannot create any dangerous situations.
Hold the »Call/End« and »Info/Set« buttons at the same time for approximately 2 seconds. This starts the monitor and all control functions are now switched off!

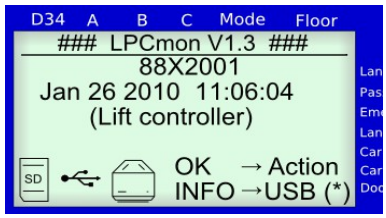


Fig. 22
LPCmon' monitoring program

5.7.12 Program and Parameter Memory

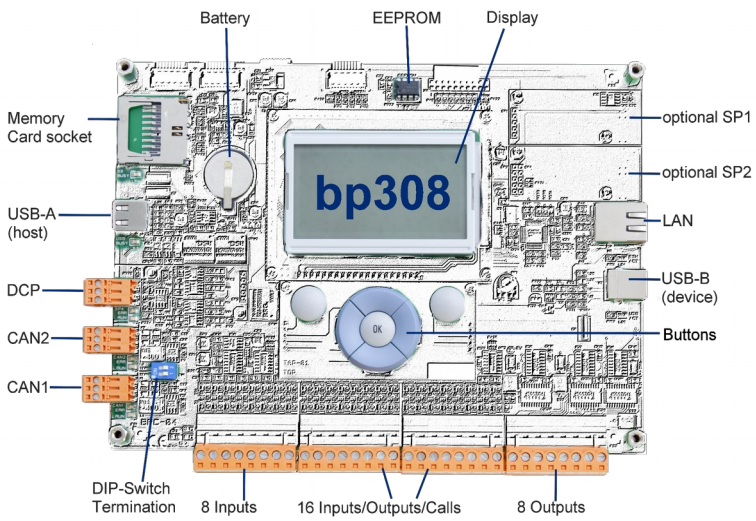


Fig. 23
Printed circuit board BPC-04 and the arrangement of its key components and interfaces.

5.7.12.1 General Information

The illustration shows the positions of the memory card slots, interfaces, EEPROMs and internal flash memory.
The printed circuit board houses the digital control electronics and the processor, the flash program memory, EEPROM parameter memory, realtime clock, battery, LC display and buttons.
The interfaces for 2 CAN networks, serial data remote transmission (optional), USB or Ethernet, USB host and USB device, and the serial selection of a frequency inverter via DCP are also mounted on this board. In addition, the bp308 has 8 inputs and 16 calls, which can also parameterised as inputs or outputs. The lift program is stored in the flash memory. All lift-specific parameters such as type, stops, doors, times, parking landings, etc. are safely stored in EEPROM.

5.7.12.2 Exchange

To exchange the EEPROM use a special EEPROM snag and draw the EEPROM from the socket at right angle. Insert the new EEPROM at right angle and press it into the socket while applying slight pressure. You must ensure that the marking (groove) is in the correct position to insert the component the correct way round!

INFO!
As the pins of EEPROMs are at risk of bending or breaking off, it is strongly recommended to use a snag as an appropriate tool .

ATTENTION!
The guarantee expires if program changes and subsequent changes of the lift controls are carried out without assistance of the BÖHNKE + PARTNER service team .

5.7.12.3 Software Update

A software update is necessary if the lift system is to be refurbished with additional functions. Exchanging the EEPROM is necessary only if the printed circuit board needs to be exchanged and the data related to the lift has to be transferred to the new printed circuit board .

INFO!
Before each software update you should back up the existing software version and parameters on a memory card, mobile phone or laptop. Then you can update the system with the new software after which you should check the system. The EEPROM parameters and existing lift program backup can be carried out on the LPCmon monitor.

There are several ways of updating software: with a file stored on a memory card or USB stick and via the USB-B (device) connection (laptop). To carry out an update using a memory card or USB stick, place the memory card containing the new software version in the memory card slot or the USB stick in the USB-A connection of the bp308. Switch on the controller and hold down the »Call/End« and »Info/Set« for approximately 2 seconds to start the LPCmon monitoring program. After clicking OK, you can access the storage medium (memory card or USB stick) containing the new program version via the *Open file* menu point. Navigate to the file (e.g. 88D2207B.bin) on the medium containing the new program and select it. You can now update the software. Follow the instructions on the display

INFO!
A software update deletes the previous software version! Please obtain information about the full functionalities of the new version and back it up, if necessary, before commencing with the update .

The system needs to be rebooted after a successful update by pressing the »Call« button. The system start and subsequent system check should be error-free
You can view the current program version number on the display in the service menu under system info.
The program version is labelled according to the following key:
e.g. label: 88D-2101

- 88 = For target hardware:
  - 88 and 78 / bp308
  - 50 and 40 / bp119
- D = Main version label:
  - D / standard main version (no longer modified)

- S / special version (customer version different from standard version
- X/ current intermediate version (will become D version)

- 21 = Key of the year the program was created:
  - 21 / 2011
  - 22 / 2012 ...
- 01 = Current version

You can also use the »Fw308« to update the software via the USB-B interface. Please contact the service department of BÖHNKE + PARTNER to get assistance in the use of this program.

5.7.13 Control System bp308 and Frequency Inverter together in one Cabinet

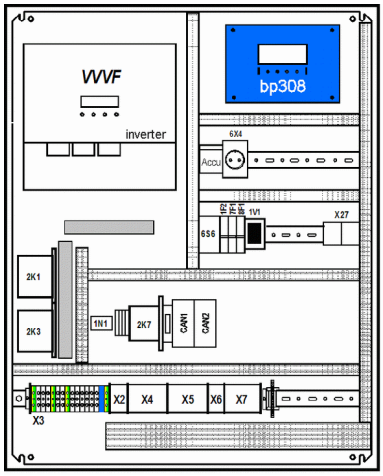


Fig. 24
Standard control cabinet containing bp308 as well as frequency inverter

The control cabinet is made of painted sheet steel. The wall-mounted cabinets have holes on the back to fix them or thread bolts to which the mounting plates included in the delivery can be attached .

Standing cabinets are mounted on the supplied feet or a pre-made frame.

They are placed an upright position so that the ventilation slots are clear. Please ensure that sufficient sound proofing is installed between the cabinet and the building in critical environments. In such cases, all contactors and the entire mounting plate inside the cabinet can be delivered with sound proofing already installed .

A sound pressure level of approximately 55 db (A) was measured at our standard control cabinets with closed doors and the control system bp308 at a distance of around 1 m and 1.6 m height. This corresponds to a sound level somewhere between a turned-down radio [40 db(A)] and a normal conversation [60 db(A)].

The cables enter at the bottom of the cabinet. Please use the correct cable connections.

The cable duct (optional) for the ingoing lines and cables can be removed if necessary for easy insertion.

Control cabinet:

- Enclosed (DIN 41488)
- Structured paint RAL 7032 (grey)
- Installation plate with cable duct
- Mains contactors insulated by rubber-bonded metal buffers
- Protection class IP 54
- Filter protection, if required
- Door lock: triangular grater or special lock
- Wall-mounted
- Bottom cable inlet

- Dimensions:
  800 x 800 x 300 mm standard
  800 x 1000 x 300 mm (thyristor-control)
  1000 x 1200 x 300 mm FRQ (integrated frequency inverter)
- Mounted on rubber-bonded metal buffers (optional)

5.7.14 Easy Service - thanks to clear Layout Assembly

The cables are installed on the base plate according to industrial standard. Incoming lines can be laid in the cable duct. All processor terminals are connected to a separate terminal strip arranged at the bottom of the control cabinet. The control components are arranged on a zinc-plated installation plate. The dimensions stated refer to a standard configuration of lift systems with eight or more landing call stations and with a main drive power of max. 15 kW. Systems with a higher power can be supplied on demand .

5.7.15 Control Cabinet with bp308 unit

Control cabinet:
- Structured paint RAL 7032 (grey)
- Installation plate with cable duct
- Protection class IP 54, with optional air filters
- Main contactors on rubber-bonded-to-metal buffers (optional)
- Dimensions: 800 x 800 x 210 mm
- Door lock: triangular grater
- Wall-mounted
- Bottom cable inlet

Main Voltage
- 3 x 230 bis 500 V AC 50 Hz N PE

Safety circuit
- 230 V AC

Main Power supply (integrated)

Output	50 VA
Control voltage	24 V DC / 2,2 A
Electronics voltage	5 V DC

Rectifier

Brake (rope traction)	180 V DC / 4 A
Lock (optional)	180 V DC / 4 A

- Valves (hydraulics) 180 V DC / 4 A

Contactors
- Nominal current 14 A
- Output 7,5 kW AC 3-operation
- Make Telemecanique (other brands optional)

Terminals
- Brand Weidmüller or WAGO

Positive temperature control
- integrated in bp308
- PTC threshold values normal operation < 2.2 kΩ ; thermistor tripping > 2.7 kΩ

Battery-powered auxiliary power supply unit (emergency light) BPN-02A
- 12 V DC, including monitoring of cabin illumination voltage

Control system
- System module bp308, 32-Bit multiprocessor system

Earth leakage circuit breaker (integrated)
- For re-levelling, doors starting to open during slowdown, and uncontrolled car movements with open doors (like SMZ-04)

Well teaching system
- Magnet switches,
- Absolute encoder
- Other transmitter systems on request

Inspection control unit
- Casing made of metal or impact-proof plastic with sufficient terminals
- Control elements integrated in the teach pad

Documentation
- Circuit diagram (DIN A4 can be copied)
- Legend of the operation elements on the circuit diagrams
- Parts list for control unit and port assignment
- Description of CPU and program summary
- Description of general operation
- Documentation for acceptance tests (TÜV) of bp308, including current terminal assignment list

► Description of the safety circuit

Standards and safety regulations
► EN 81, SIA, ÖNORM, DIN, VDE, VBG 4

5.7.16 Standard Features

Assembly
The system bp308 is supplied ready for installation, mounted on a stable aluminium plate. The electronic unit consists of the stabilized power supply, the power circuit board and the computer board, safely joint and wired. All signals are fed out via plug terminals or standardized standard plug connectors .

Dimensions
B x H x T 270 x 170 x 180 mm

Power Supply (Integrated)
Control voltage: 24 V DC / 2,2 A
Electronics: 5 V DC / 2,0 A
Overload protector, power fail

Pre-control
Interface relays selecting the mains contactors

Safety Circuit Monitoring
230 V AC electronic, TÜV-inspected (German Association for Technical Inspection),

Positive Temperature Control
Monitoring all common PTC thermistors

System Control
Main processor 32-Bit microprocessor (ARM)

LC-Display (integrated)
Graphic, 128x64 pixel, illuminated
Maintenance, diagnostics, and parameterisation tool

Travel and Operating Hours Counter
Integrated as standard (including pre-warning threshold for rope replacement)

Operation

7 command and programming buttons (Call / End, Info / Set, Up, Down, Right, Left, OK)
Functions, intervals and lift processes can be freely adjusted
Controls can be locked with codes.

14 Inputs

24 V DC, opto-decoupled, input current approx. 10 mA

8 Outputs

24 V DC, 24 V DC, opto-decoupled, short circuit resistant, overload resistant
Output current 280 mA, power 6 W

16 Calls

24 V DC,DC, opto-decoupled, input current approx. 10 mA, output current 280 mA, power 6 W, short circuit resistant, overload resistant
Calls may also be freely parametrised as additional inputs or outputs.

Relay Outputs (Programmable)

Two relays, contact 230 V AC / normally closed contact
Two relays, contact 230 V AC / normally open contact
Four relays, contact 230 V AC / make-break contact

Doors

Integrated selection of three electronic door drive units

Safety Circuit

For relevelling and doors starting to open during slow down (e.g. SMZ -04)

Integrated Interfaces

LAN interfaces:	Ethernet 10/100 MBit for monitoring-systems
USB-B interface:	PC connection for diagnostics and software updates
DCP-interface:	Interface (RS485) for communication with frequency inverter via the DCP protocol
CANopen-interfaces:	Interface (CAN high speed) for communication with all components according to the CANopen application pro file CiA-417
USB-A Schnittstelle:	Useable for USB modems, USB sticks, Böpa Bluetooth™ or WiFi stick,

Memory card: Memory card slot

Optional Interfaces

RS232, RS422, RS485 with different protocols for transponder, building automation, touch and LCD monitors, gateways for LONworks, Modbus and internet services .

5.7.17 Optional Features

5.7.17.1 Uninterruptible Power Supply (UPS)

BÖHNKE + PARTNER supplies control units for the lift industry. A UPS can be fitted to your ordered controller as an option. It can be used for maintaining operations during a power cut.
The compact and powerful UPS used by us is a state-of-the art model. It is important for the applied technology to be reliable, cost effective to run and to have excellent electrical characteristics.
The UPS system performance was designed to match the on-site requirements you stated. As the UPS system must always be ready to use in cases of emergency, it has to be checked regularly.
The operator is responsible for maintaining the UPS in a ready-to-use condition at all times but may delegate this task to the engineering company appointed to carry out the maintenance work.

CAUTION!

Prior to installing or operating the UPS, please read the accompanying operating instructions carefully. Adhere to all hints, instructions and safety notices during installation and operation .
The operating instructions must be stored with the UPS at all times for later use.
All maintenance work must be carried out by qualified and trained personnel.
Do not attempt to repair or maintain the UPS yourself. Live components are exposed when opening the casing or removing the covers.
You risk fatal injury upon touch !
BÖHNKE + PARTNER does not assume any liability for any damages caused by the incorrect manipulation of the UPS. Only the guarantees of the UPS manufacturer shall apply .

Operational Availability of the UPS System

BÖHNKE + PARTNER supplies control units with integrated UPS and expects components to be installed within a period of four months.
If the UPS system is not to be installed immediately, it has to be stored in a place with temperatures between +5° and +40°C and a

constant relative humidity below 90%. If the transport casing has been removed, the unit also has to be protected against dust.
The UPS system contains tightly sealed, maintenance-free lead accumulators that may be damaged if stored in a discharged state for a prolonged period of time or if exposed to high temperatures. For this reason, the storage time must not exceed six months at +20°C, three months at +30°C, and two months at +35°C with reloading the accumulators. Please ensure that the interval between two accumulator charges is no more than six months.

CAUTION!
Please ensure that the UPS is switched off during assembly. Also ensure that the main switch and its auxiliary contact securely turn off the UPS after turning the main switch to the "off" position. This makes certain that the UPS is only activated during a power cut .

OPERATIONAL AVAILABILITY OF THE UPS
As the UPS must always be ready to use in cases of emergency, it has to be checked regularly. Its operational availability (standby time) must be checked at regular intervals of six to 12 months or whenever there are signs of operational availability becoming impaired. Inspect all warning, indicator and operating components of the UPS.
As described in the UPS operating instructions, you must regularly check the operational availability to ensure that the unit is functioning at all times. Please follow the instructions closely.
A defective UPS system must be replaced immediately with a new unit of the same specifications.

UPS LIFE SPAN
The availability of the UPS depends on accumulator performance. The life of the accumulators is strongly influenced by environmental temperature. They achieve the longest life span at temperatures between +20°C and +25°C.
To ensure operational availability for the benefit of users, the entire set of accumulators must be replaced with a new set of the same specifications after a period of four years.
Please dispose of the old accumulators in accordance with your local waste regulations.
Should you experience any problems with the UPS or require safety-related information, please contact the manufacturer at the address stated in the operating instructions.

6 Installation and Commissioning

Prior to installing and commissioning this unit carefully read the safety instructions and warnings and pay attention to every warning label attached to the unit. Make sure that the warning labels are readable at all times and replace missing or damaged labels .

ATTENTION!
For safe operation of the device it is necessary that skilled personnel properly installs and commissions it in adherence to the warnings given in this manual. It is especially important to observe not only the general and local installation and safety regulations concerning the work with power engineering systems (e.g. VDE), but also those for the proper use of tools and personal safety equipment .
Make sure that the cooling air flowing through the vent slots is unobstructed and clear an area of at least 100 mm in front of them.
Prevent undue vibrations and shocks to the device.

6.1 Conditions for Storage and Operation

ATTENTION!
Improper conditions of storage and operation can damage the device and endanger persons !

- Storage temperature: -20 °C bis 70 °C,
- Operating temperature: 0 °C bis 60 °C,
- The environmental temperature around the control cabinet may range between 0°C and 40°C. If the operating temperature falls below 5°C, the LC display may stop functioning properly. If the maximum admissible environmental temperature is exceeded, the control cabinet must be cooled down (up to 60 °C with a fan, with a cooling aggregate for higher temperatures). Keep the ventilation slots clear .
- The components must not be exposed to aggressive mediums, dust, mist, water or humidity. The control cabinet should therefore correspond to at least protection class IP54 .
- Prevent dew from forming on any of the components!
  Example: Formation of dew in a damp machine room after switching out the control.
- Please ensure that sufficient sound proofing is installed between the unit and the building in critical environments.
- Our control systems are laid out for a primary voltage of 230 V AC 50 Hz .
- If an earth leakage circuit breaker is integrated in a control system with frequency inverter, ensure that these current operated circuit

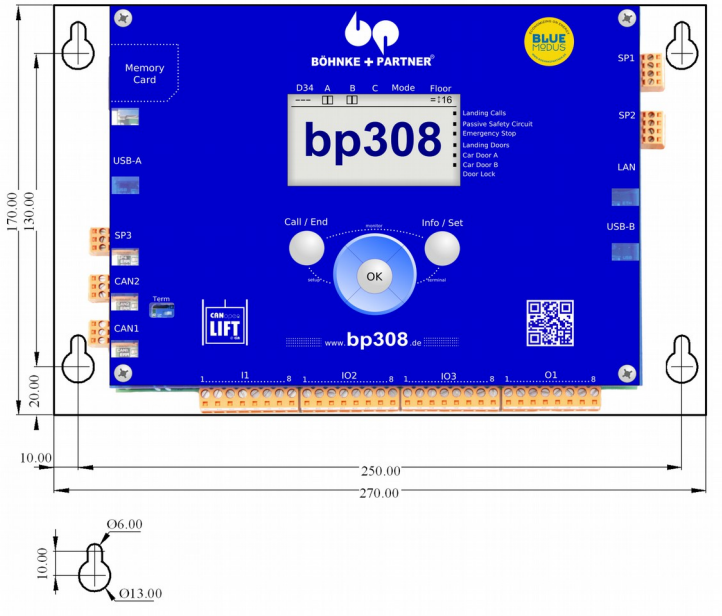
breakers are sensitive to all currents. Pursuant to DIN VDE 0160, 5.5.3.4.2, it is not allowed by to use any other current operated circuit breaker as a DC component within the leakage current might prevent activation of the circuit breaker. The maximum admissible current for triggering this all-current-sensitive circuit breaker must not exceed the value $I_{\Delta N}$=0.3 A.

6.2 Preparation

INFO!

- BÖHNKE + PARTNER checks the entire lift control unit before supplying it. We document the status of supply in the circuit diagrams and in the protocol of the setup and service menu.
- Each control unit comes with circuit diagrams and technical documentation clearly marked with the control unit number.
- All 24 V DC control signals (in- and outputs) are galvanically isolated from the control electronics.
- The control unit is to be installed in adherence to our circuit diagrams.
- The 24 V DC control lines and the data lines RS232, RS485, USB, CAN, LON, Ethernet and telephone must be laid separately from the load lines!
- When installing the control unit, you must adhere to the technical data that has been used during production according your order.

6.3 Installation of the Controller System bp308



The control system bp308 is supplied on an aluminium base plate. It has got four drill holes for fixation. The plate may be fixed through these holes only.

Fig. 25
The control system is supplied in a cabinet, which is either wall-mounted or standing on the floor.

6.4 Installation of the Control Cabinet

BÖHNKE + PARTNER supplies your lift control unit in a control cabinet. According to your requirements it is either wall-mounted or standing on the floor. Please fix your control cabinet as per the instructions enclosed.

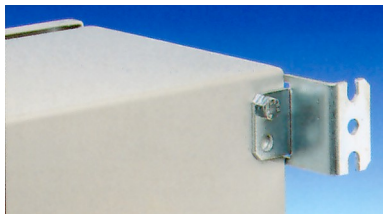


Fig. 26
Wall-mounted cabinets are equipped with fishplates on the back for fixing to the wall.

6.5 Assembly of the Car Terminal Box

The terminal box on the car is to be fixed in a way that you can easily and safely reach the inspection control switch and possibly available sockets and properly insert the travelling cable.

6.6 Assembly of the Absolute Encoder

The absolute encoder places the absolute position and speed of the car at the disposal of every bus participant. It can be mounted either in the shaft head or on top of the car. A toothed belt provides a non-slip connection to the car. The unit may also be mounted at the speed governor. In this case, the toothed belt does not have to be used, but a magnet switch is to be inserted for correcting the slippage.
Please fix your control cabinet as per the instructions enclosed.

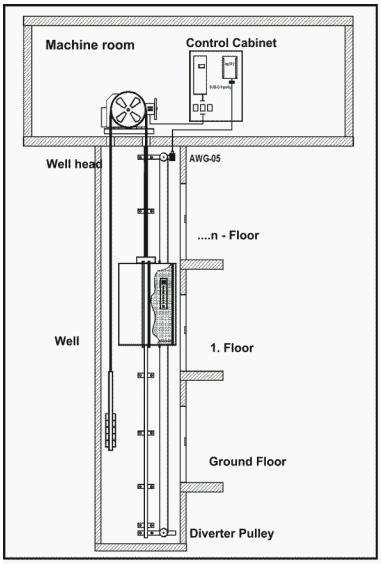


Fig. 27
The absolute encoder is driven by a non-slip toothed belt.

6.6.1 Fixation Kits for Absolute Encoder

There are different fixation kits available for the different ways of mounting the absolute encoder in the shaft or on the car.

Typ S 100

Absolute encoder type AWG-05 with fixation kit in the shaft, comprising big toothed reel 10 mm wide, jagged flanges, suitable for travel heights of up to max. 60 m and speeds of up to max. 4.0 m/s
Product no.: 287-051-003

Typ K 105

Absolute encoder type AWG-05 with fixation kit on car, comprising big toothed reel 10 mm wide, jagged flanges, suitable for travel heights of up to max. 180 m and speeds of up to max. 4.0 m/s
Product no.: 287-051-004

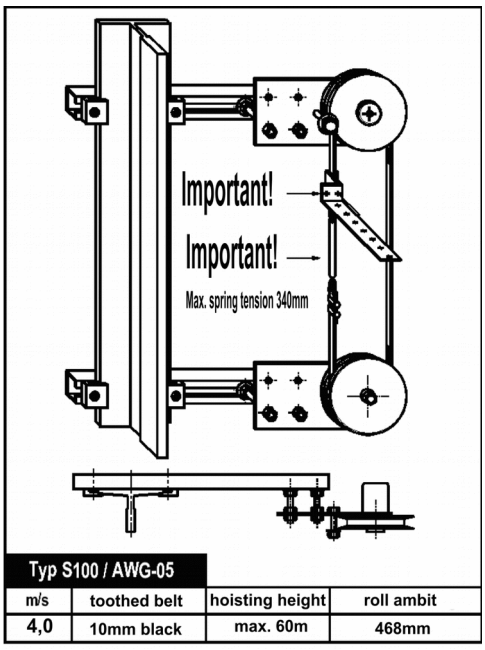


Fig. 28
Fixation kits for mounting in the shaft (Type S100).

Toothed Belt

Z 10s, 10 mm, jagged flanges, black, for S 100, K 105
Product no.: 3020-130-100

6.6.2 Assembly in the Shaft

The absolute encoder is mounted to the guide rail in the shaft. It is driven by a toothed belt with a non-slip connection to the car via a deflection pulley.

6.6.3 Assembly on the Car

A variant of the above-mentioned mounting is the mounting of the absolute encoder on the car. A toothed belt tightened from the shaft head down to the shaft pit drives the absolute encoder. On one hand you have got the advantage of a shorter toothed belt, on the other hand the disadvantage that the toothed belt may generate a rolling sound when the toothed reel runs along at high speed. This can however be reduced by a special layer on the belt pulley.

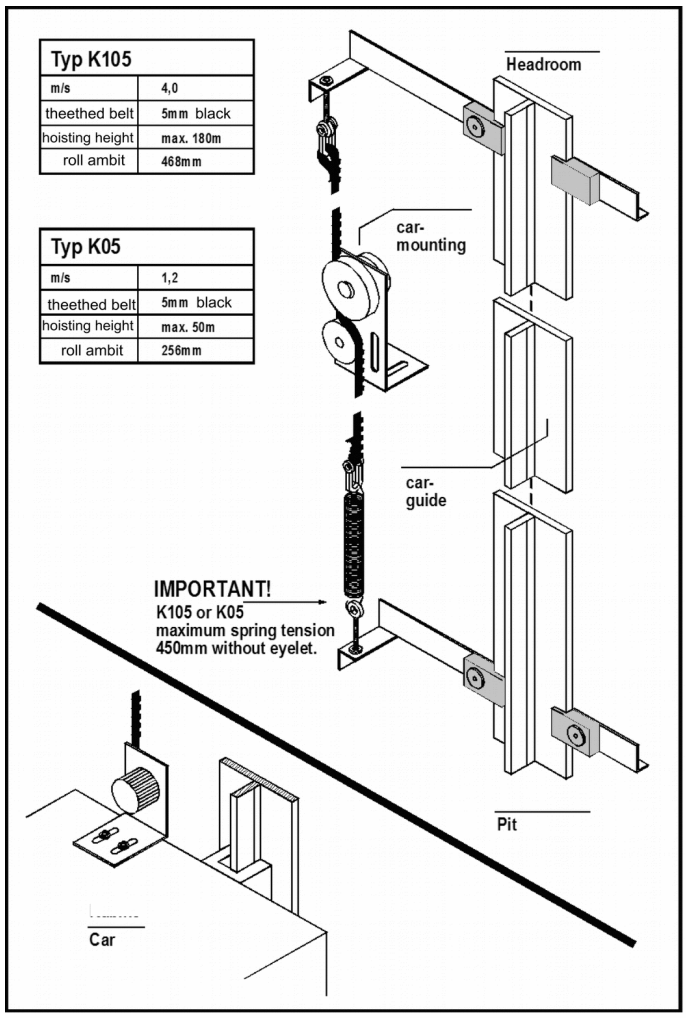


Fig. 29
Fixation kits on the car.

6.7 Assembly of the Magnet Switches

If magnet switches are to be used, they are to be mounted on the car in a way that they pass by the magnets at a distance of approx. 5 mm while the car is travelling through the shaft.

Definition of the Switches:

S71	Correction switch top	Normally closed
S72	Correction switch bottom	Normally closed
S73	Re-levelling switch up	Normally open
S74	Re-levelling switch down	Normally open
S75	Impulse up	Normally open
S76	Impulse down	Normally open
S77	Level position switch up	Normally open
S78	Level position switch down	Normally open
S553	Zone switch "A"	Normally open
S554	Zone switch "B"	Normally open

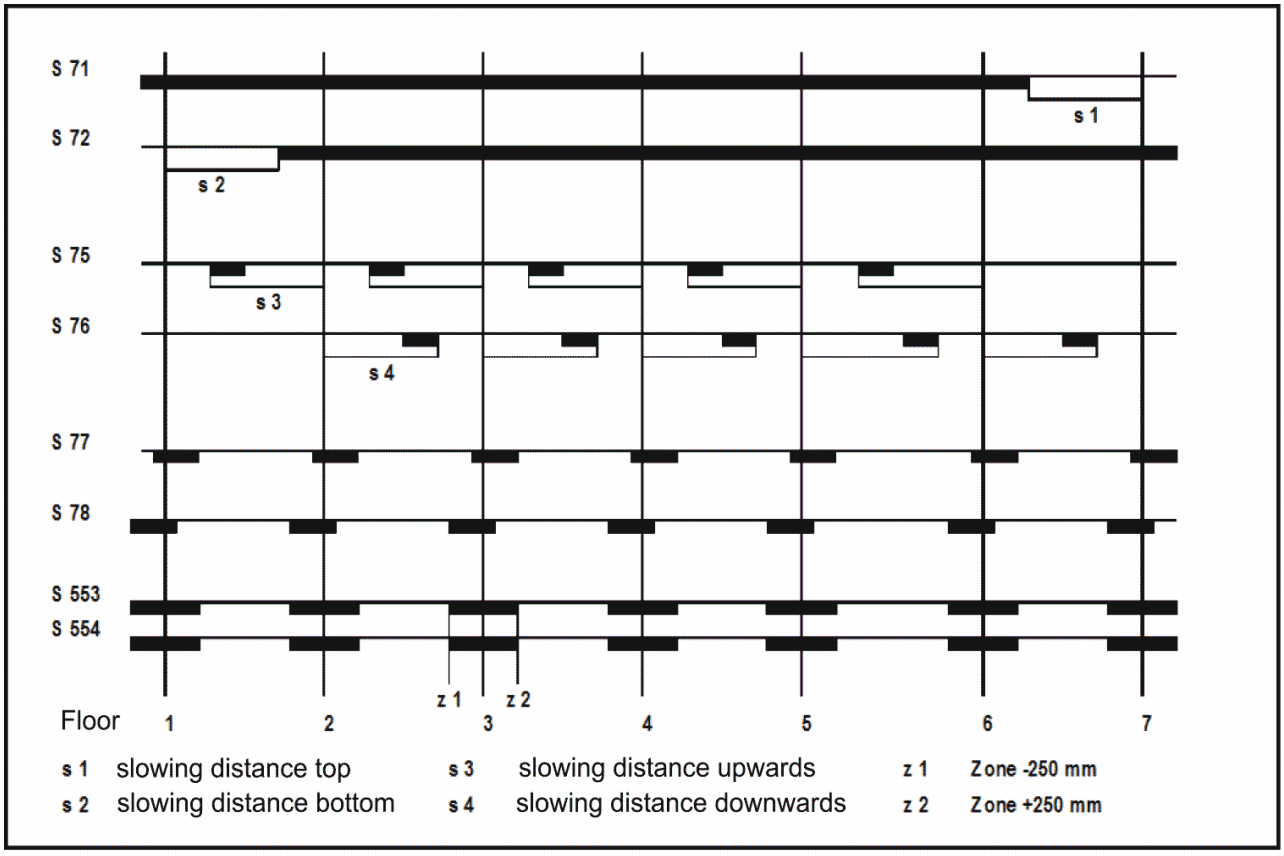


Fig. 30
Example of a pulse diagram with magnet switches.

7 Electrical Installation

7.1 Preparation

Prior to installing and commissioning this unit carefully read the safety instructions and warnings and pay attention to every warning label attached to the unit. Make sure that the warning labels are readable at all times and replace missing or damaged labels.

ATTENTION! DANGEROUS VOLTAGE !

- Make sure that the devices you work on do not carry current! Disconnect the system from the power (according to the circuit diagram.
- Before carrying out any work on the lift control, ascertain that it does not carry any voltages of > 50 V AC .
- Plugs must not be inserted in sockets as long as the according devices are not switched off.
- Pay attention to the rules concerning the handling of delicate electronic printed circuit boards (protection against electrostatic charges)!
- Before connecting the device to the power supply, check whether the indications on the type label of the lift control correspond to the values of the connected load.
- All electrical installations must comply with the general installation regulations, including:

1. VDE 0100 *Bestimmung für das Errichten von Starkstromanlagen mit Nennspannungen bis 1000 V* (rules for the installation of power engineering systems with nominal voltages of up to 1000 V, from the association of German electrical engineers).
2. DIN EN 50178 (VDE 0160) *Ausrüstung von Starkstromanlagen mit elektronischen Betriebsmitteln* (equipping power engineering systems with electric operating resources, from the association of German electrical engineers).
3. Legal regulations for the prevention of accidents, such as for example BGV A2.
4. Legal regulations for the prevention of accidents, such as for example BGV A2.

- If the lift control unit or related components are used in special environments (e. g. ex-area), it is to be ascertained that the relevant standards and regulations are adhered to.
- If the lift control unit is fitted with an uninterruptable power supply (UPS), it is not be sufficient to disconnect the power to the unit with the main switch; the UPS has to be turned off separately.

7.2 Interference Suppression and Hints

All industrial, electronically controlled devices, such as, for example, PCs, microprocessors, computers, SPSs, can be influenced by interference pulses if they have not been protected accordingly. These interference pulses can be caused by external appliances, such as e. g. voltage fluctuations in the feed-line or control pulses of the power parts in the frequency inverter. BÖHNKE + PARTNER have taken all usual measures while manufacturing the control unit. The installed components are only slightly sensitive to interferences from their environment. The control units have been designed for applications in industrial environments where a high degree of electro-magnetic interference is to be anticipated. Operation without risk and interference can be generally warranted by proper installation. Should difficulties arise despite taking these measures, adherence to the following directives might prove useful. It might be particularly efficient to earth the reference potential of the system (0 V) in the control unit, as described below

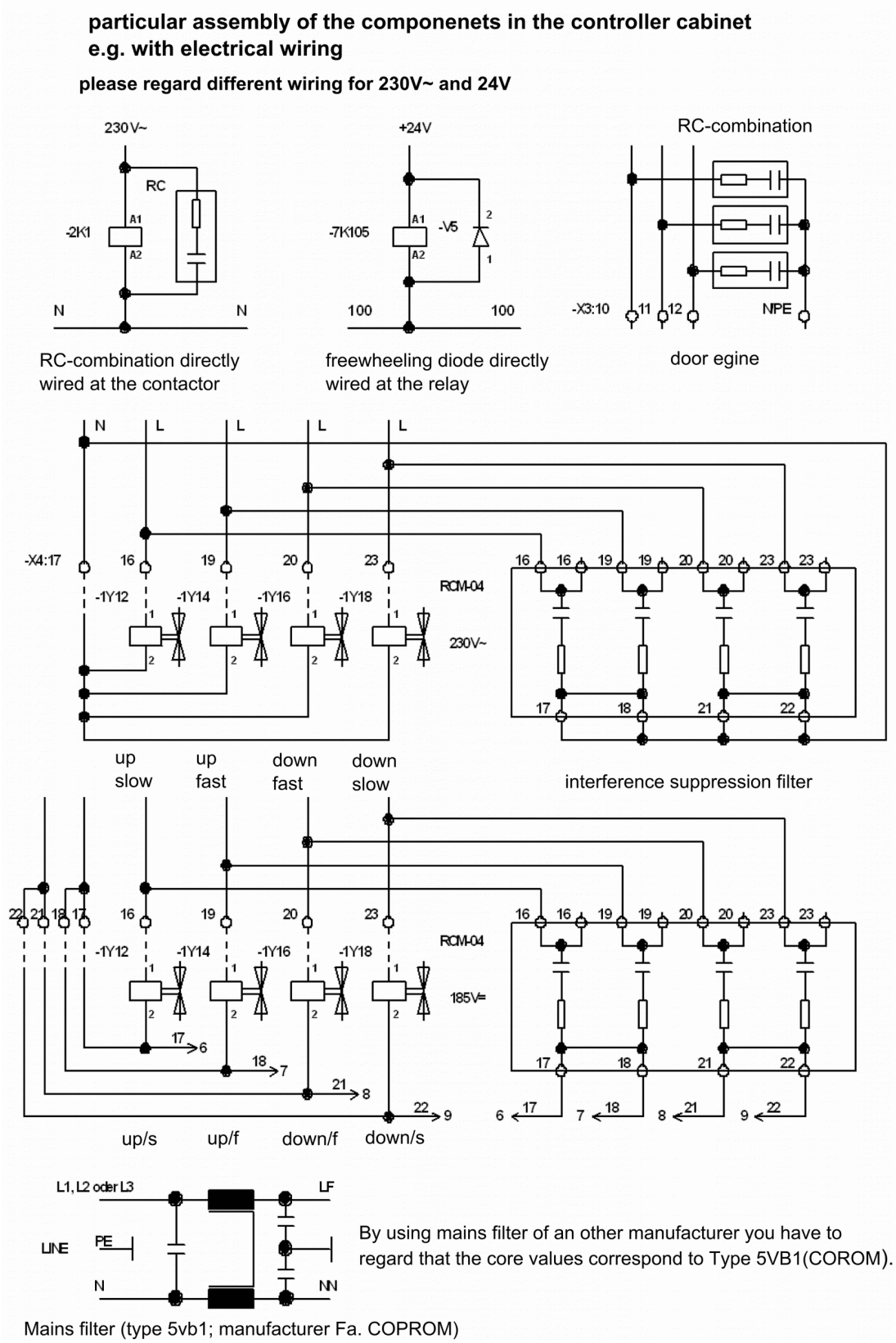
INFO!

- BÖHNKE + PARTNER checks the entire lift control unit before supplying it. We document the status of supply in the circuit diagrams and in the protocol of the setup and service menu.
- Each control unit comes with circuit diagrams and technical documentation clearly identified by the control unit number.
- All 24 V DC control signals (are galvanically isolated from the control electronics.
- The control unit is to be installed in adherence to our circuit diagrams.
- Control lines and bus lines must be laid in a different location to the load lines.
- When installing the control unit, you must adhere to the technical data that has been used during production according your order.
- Follow the EMC instructions given by the manufacturer of the frequency inverter at all times !
- Should you have any question concerning the EMC Directive please ask our service team .
- Please also pay attention to the information concerning cable shielding (section 7.3)

Please consider the following measures:

- The control system bp308 exclusively serves as an information processing device within the lift control system. All control signals are processed by positive circuitry or via the CAN Bus. The Safety Regulations TRA and DIN EN 81 are not restricted by the electronic information processing.
- The control unit has been designed, manufactured and tested in accordance with DIN EN 81 (TRA) and the VDE regulations. You must adhere to the relevant regulations for the commissioning of electric control unit and operating devices. You should also follow the local lightning protection rules.
- Each control unit comes with circuit diagrams and technical documentation clearly identified by the control unit number.
- The mounting and installation instructions of third-party device manufacturers must be followed exactly.
- To conform to the EMC Directives, you have to wire an appropriate one-phase mains filter into the 230 V AC control circuit and connected signal circuit
- The control lines are to be laid separately from the load lines in separate cable ducts. Crossing lines are to be laid at an angle of 90°.
- Control devices are always to be connected by applying choke, filter and shielded cables and according to the mounting and installation instructions of the manufacturer.
- Ensure that all the devices contained in the cabinet are properly earthed via short earthing lines with large diameters that are all connected to a mutual earthing point or earthing bus. It is of particular importance that every control device connected to an inverter (e.g. a speed encoder) has short lines with a large diameter and is connected to the same earthing point as the inverter itself. Preferable are flat lines (e.g. metal brackets) as they have a lower impedance at high frequencies.
- Use shielded or reinforced cables for load lines between drive unit and inverter or control unit, and connect the shielding/reinforcement to the earth at both ends.
- Data lines (group, data remote transmission, printer connection, etc.) are generally made from shielded cables. The shielding of data lines should be connected to the earth at one end
- Mounting racks consist of zinc-plated sheet steel, enabling large surface earth connection to all control components.
- Interference-proof structural elements improve resistance against environmental interferences.
- The car is to be connected to the earth by the green/yellow line of the travelling cable.

- Idle lines of the travelling cable should be connected with one end to the earth at the control cabinet
- The components of the control unit conform with the regulations of DIN EN 81 (TRA) as well as VDE 0100 / 0101 / 0551 / 0660 and BGV A2. The control cabinets conform to the installation standards VDE 0660 / part 500.
- Mains and auxiliary contactors used in the control unit comply with DIN EN 81 part 1, 13.2, (TRA 260.82) as well as VDE 0660, but at least equipment class D3.
- Voltage fluctuations are permissible if they range within a tolerance of +10% to -20% normally guaranteed by the utility company.
- Damages for malfunctions caused by an impermissible voltage rise may not be claimed from the manufacturer.
- If owners add further coils (inductivities) at their own discretion, it is be of utmost importance that these coils are interference-proof as well.
- DC-powered inductivities such as, for example, in contactors, relays, brake magnets, lock magnets and hydraulic valves must be equipped with a diode (1000 V / 1 A), anti-parallel and as near as possible to the coil (BÖHNKE + PARTNER use a free running diode).
- AC-powered contactors, relays, brake magnets, lock magnets and hydraulic valves are required to be equipped with a RC combination pitched on the type of coil, in parallel and as near as possible to the coil (the RC combination of BÖHNKE + PARTNER is universally usable).
- AC-powered door operators, braking and locking motors are to be equipped with a RC combination pitched to the motor type, in parallel and as near as possible to the motor coil. The RC combinations are radially connected to the motor coil (the RC combination of BÖHNKE + PARTNER is universally usable).
- Interference suppression means are to be properly installed.



▲ Fig. 31
Interference suppression circuit diagrams

7.3 Connection of Shielded Cables

To achieve an optimal electro-magnetic compatibility (EMC) of the lift system, all shielded cables have to be connected according to the following illustrations, provided that they have not been manufactured as EMC plug connectors .

INFO!
It is not sufficient to twist the cable shielding and clip this »pigtail« to PE potential. For a good EMC it is important to connect the shielding always with its full surface .
If users connect further shielded cables at their own discretion, it is of utmost importance that they connect them as shown in the illustrations!
Follow the EMC instructions given by the manufacturer of the frequency inverter at all times!
For any question concerning the EMC legislation please contact our service team who will be pleased to advise you.

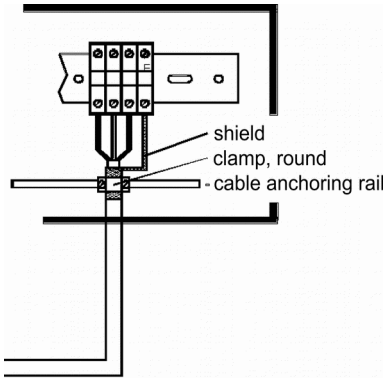


Fig. 32
Example of the connection of a shielded cable

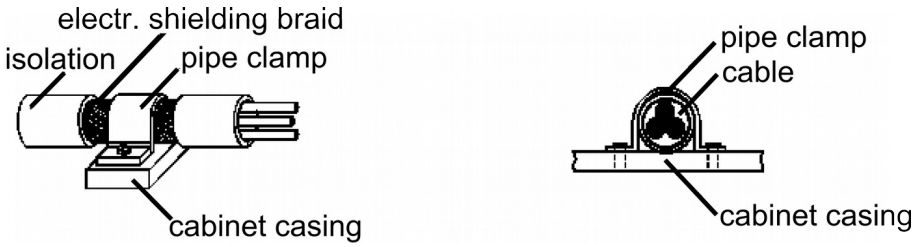


Fig. 33
The shieldings are to be connected with their full surface to the PE potential by a cable or pipe clip.

7.4 Designation of Circuit Diagrams

BÖHNKE + PARTNER define the different components in terms of functional groups. We decided not to apply a fixed system when naming the components. By preparing the circuit diagrams with a CAD system, we achieve a high flexibility in designating the circuit diagrams and parts lists. Each component is designated directly in the circuit diagram with reference to function as well as project, i.e. in a specific way for each customer.
Meanings of the abbreviations (functional groups):
A - Modules made by BÖHNKE + PARTNER, inverters
B -
C - Separate condensers

D - Diodes (e.g.: free- running diodes of DC relay)
E - Illumination (230 V AC – 240 V AC [e.g.: E5 = cabin light])
F - Fuses (e.g.: F2 = control fuse)
G - Incremental encoder, tacho generator (analogue, digital)
H - Analogue signals, visible and audible (6 V DC - 24 V DC [e.g. H7 = alarm buzzer in the shaft])
I -
J -
K - Main and auxiliary contactors, relays (e. g.: K1= mains contactor up)
L - Chokes, coils
M - Motors, fans
N - Mains filter
O -
P - Digital indicators
Q - Motor protection switch
R - Resistors (e.g.: R5 = positive temperature control thermistor)
S - Switches
T - Transformers (e.g.: T2 = control transformer)
U -
V - Rectifiers
W -
X - Terminals, terminal strips
Y - Magnets (brakes, locks, valves)
Z -

Examples of designations in circuit diagrams:
2K5 contactor K5 on page 2 ...
4S71 switch S71 on page 4 ...
On page 2... (e.g.: page 21) a »star« may be found as a designation together with the corresponding contactor symbol, thus defining contactor K5 as a star contactor .
On page 4... (e.g.: page 40) »correction up« may be found as a designation together with the corresponding switch symbol, thus defining switch S71 as a »correction switch up«.
The CAD software used by BÖHNKE + PARTNER prevents the duplication of designations.

Safety Circuit

INFO!
Once the safety devices are activated they prevent the lift from starting when called and/or stop a travelling car immediately .

The safety circuit was designed to monitor the following external signals:

- Closed position of maintenance door and emergency exits,
- Locked status of car doors,
- Locked status of landing doors,
- Closed position of landing doors,
- Closed position of car doors,
- Emergency stop switch on top of car, in car, in machine room ,
- Speed governor,
- Buffer contacts,
- Emergency limit switches top and bottom,
- Safety gear,
- Landing door zone with safety circuitry.

Doors and locks are monitored within the landing door zone, while the car is approaching the landing with door starting to open and while it is relevelled.

Every travel contactor and auxiliary contactor of the safety circuit is laid out according to VDE 0660, device class D3. The safety circuit has a signal voltage of 220-240 V AC.

The safety circuit functions are independent from those of the control system bp308. In case of a malfunction, the operational voltage of the output module for control elements is cut off.

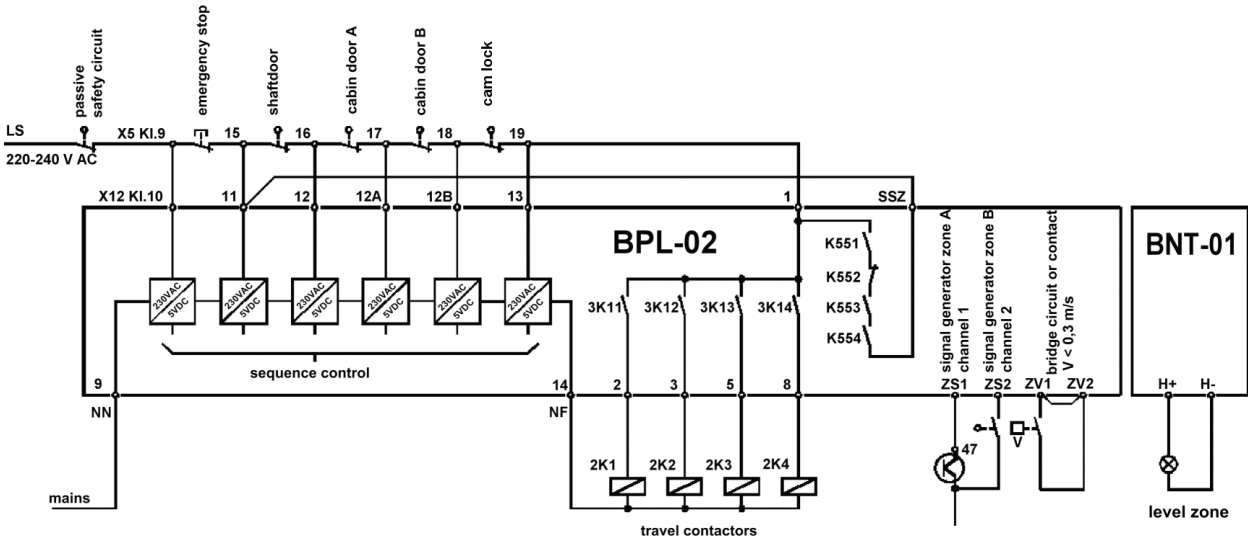
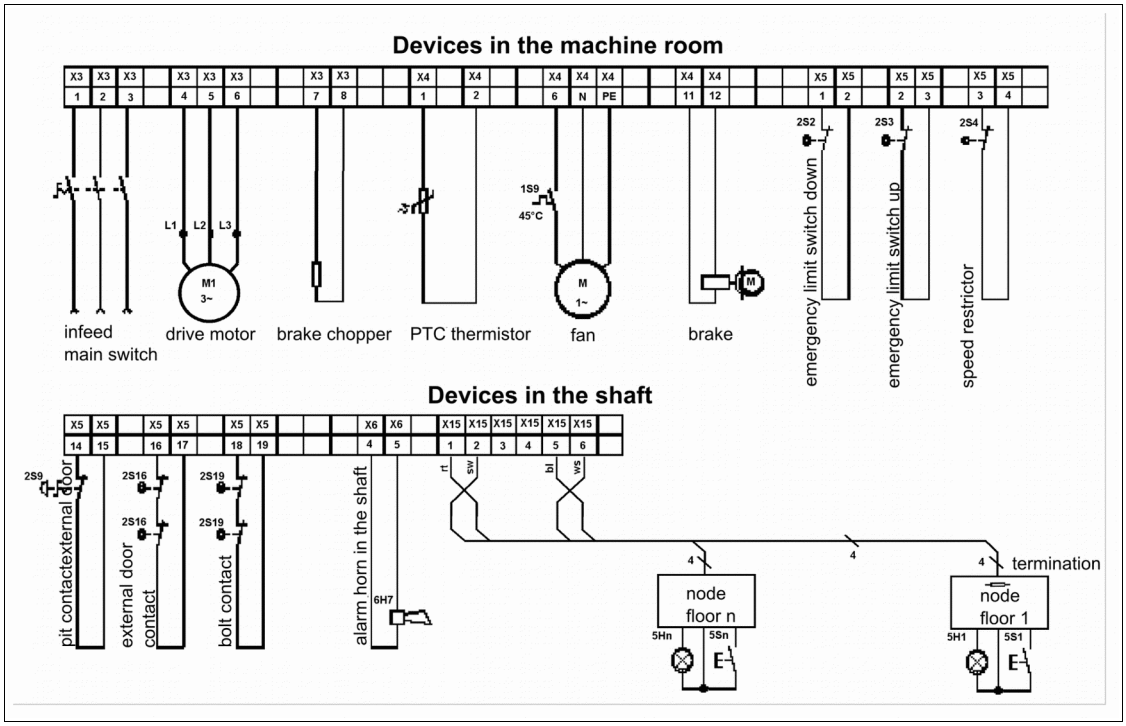
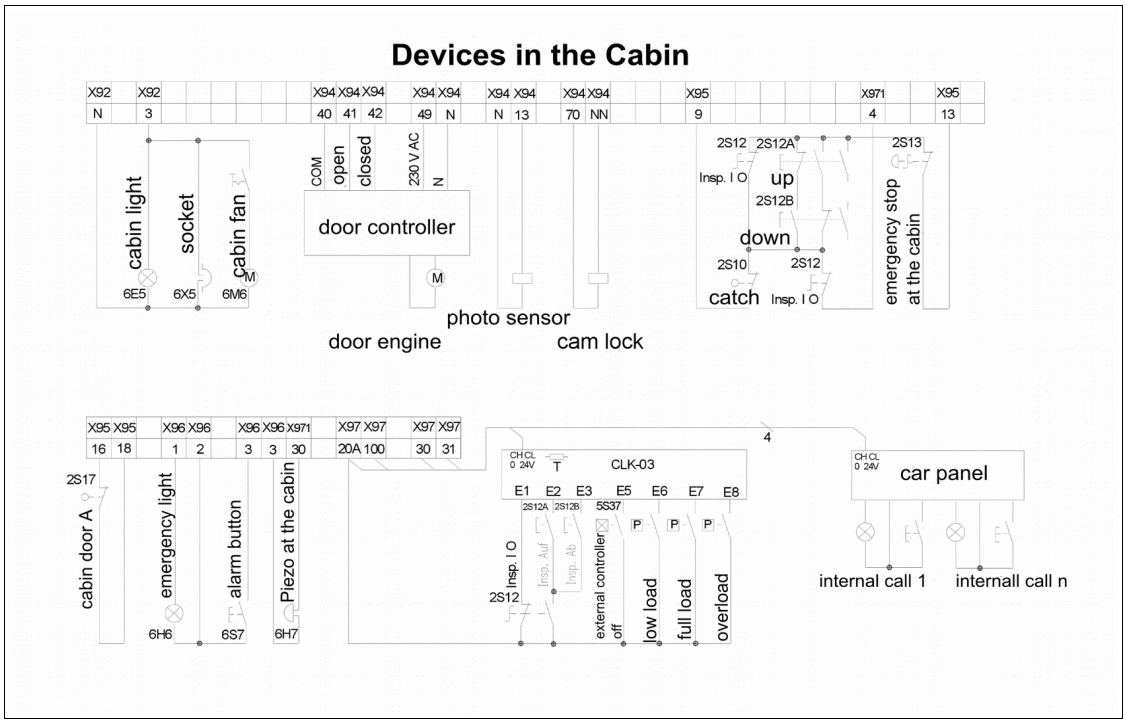


Fig. 34
Standard arrangement of a safety circuit related to bp308

7.5 Sample Circuit Diagram of a Rope Traction lift



◀ Fig. 35
Wiring of the machine room



◀ Fig. 36
Car wiring

7.6 Sample Circuit Diagram of a Hydraulically Operated lift

Fig. 37
Wiring of the machine room

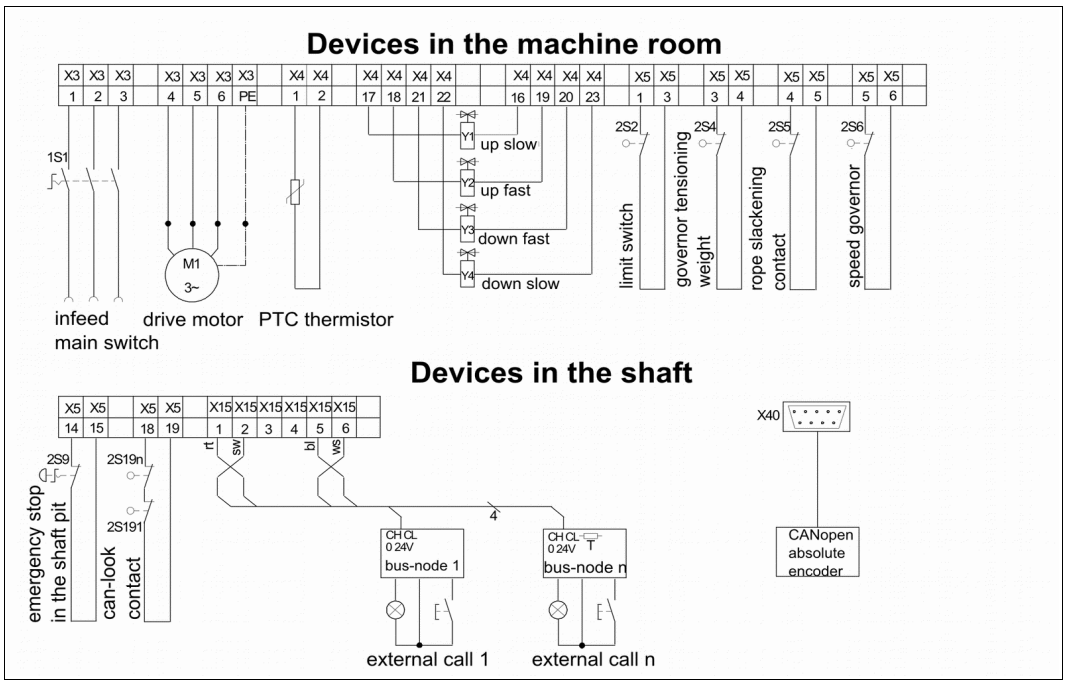
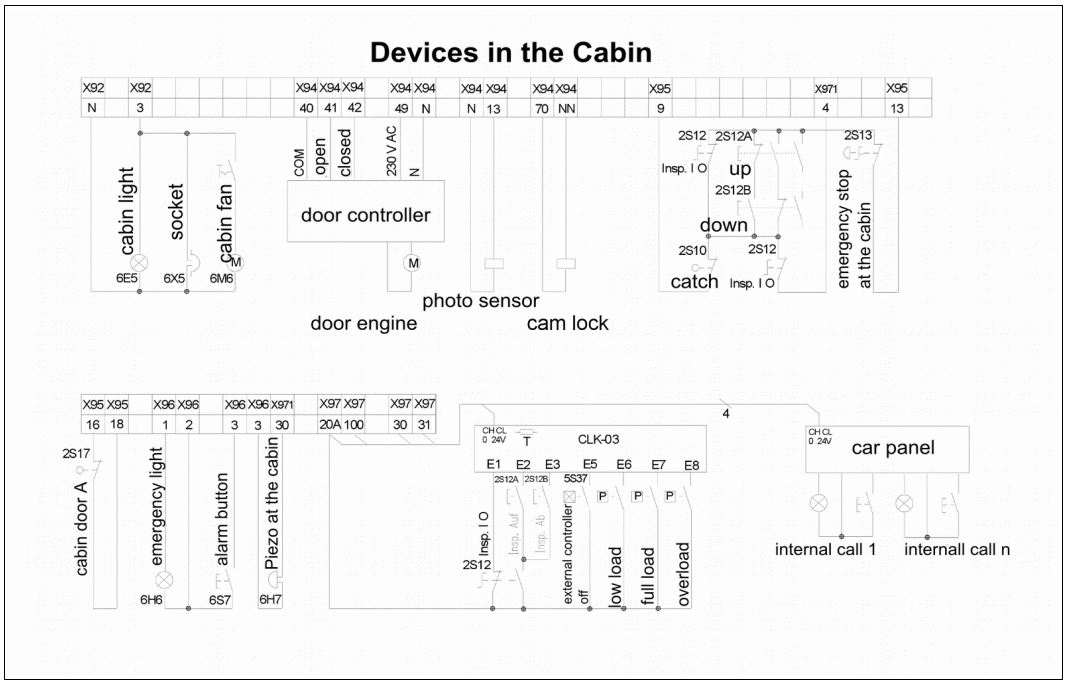

Devices in the machine room
X3 X3 X3 X3 X3 X3 X3 X4 X4 X4 X4 X4 X4 X4 X4 X4 X5 X5 X5 X5 X5 X5 X5 X5
1 2 3 4 5 6 PE 1 2 17 18 21 22 16 19 20 23 1 3 3 4 4 5 5 6
1S1
M1
3~
Y1 up slow
Y2 up fast
Y3 down fast
Y4 down slow
2S2 limit switch
2S4 governor tensioning weight
2S5 rope slackening contact
2S6 speed governor
infeed main switch
drive motor
PTC thermistor
Devices in the shaft
X5 X5 X5 X5 X15 X15 X15 X15 X15 X15
14 15 18 19 1 2 3 4 5 6
rt sw bl ws
2S9 emergency stop in the shaft pit
2S19n
2S191 can-look contact
4
CH CL 0 24V bus-node 1
CH CL 0 24V T bus-node n
external call 1
external call n
X40
CANopen absolute encoder

Fig. 38
Car wiring



7.7 Electrical Installation

After having mounted all components, proceed to their electrical installation according to the circuit diagrams. Properly connect all the terminals and adhere to the EMC wiring directives.

7.8 Bus Connection

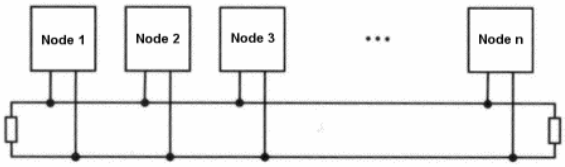
The lift control systems bp308 comes with the CAN Bus according to application profile CiA-417. This profile describes the physical parameters of the bus lines as well as the topology. There are generally special rules for the wiring of bus systems.

7.8.1 Electrical Bus Medium

The components corresponding to CiA-417 require a two-wire data communication line. Speaking in bus-terms, the components connected are denominated as nodes. Nodes are connected to the bus in parallel. It must be ascertained that the topology of the bus line always forms a line. The CAN high speed standard (ISO99-2) requires both ends of the bus to be terminated with a resistor (120 Ohm) each. These terminations can be implemented in different ways. It is possible within some nodes to activate an internal resistance via a DIL switch or jumper, in other ones a resistor is to be connected to the bus terminals. Read in the relating manuals of all connected nodes how to realize the termination!

The driver modules used restrict the maximum amount of nodes per bus to 64. If more nodes are required, it is necessary to use repeaters or gateways (read further down). Furthermore, all nodes connected must have identical baud rates. The baud rate is preset to 250 kBit by network master bp308 at the interfaces CAN1 and CAN2. All the other components made by BÖHNKE + PARTNER are equipped with an automatic baud rate identification or have been preset to a baud rate of 250 kBit. Due to the baud rate used, length of the bus must not exceed 250 m. Stub lines to the nodes must keep below 3 m length.

▲ Fig. 39
lift components that correspond to the application profile CiA-417 may be carry this logo .



▲ Fig. 40
The bus ends must be terminated each with a resistor of 120 Ohm.

7.8.2 Colours of the Cables

CANopen does not pre-define the colours of the bus lines. To facilitate wiring and fault-finding, we recommend the following colours for the bus lines:

Signal	Description	Colour
CAN_L	CAN-Bus-Signal (dominant low)	Blue
CAN_H	CAN-Bus-Signal (dominant high)	White
GND	External electrical ground	Black
CAN_V+	External voltage supply (+24 V)	Red

7.8.3 Topology of the Network

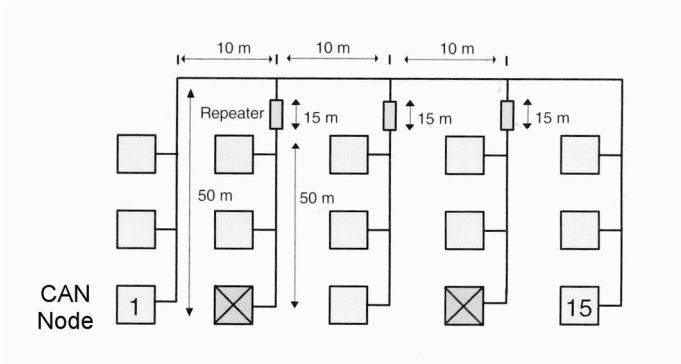


Fig. 41
Additional lines are connected by the use of repeater or gateways

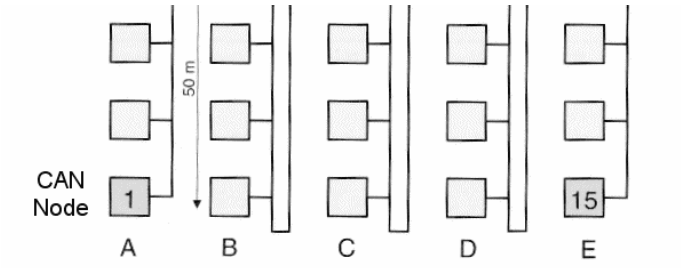


Fig. 42
Nodes are always to be wired in line.

Owing to laws of physics within a bus system, a topology is required. A line structure is specified for the CAN-bus by CiA-417.

This line structure cannot always be realised in practice. Therefore it is possible to connect further lines via repeater or gateway. Please note that every line behind a gateway or a repeater is to be regarded as an independent bus and consequently properly terminated at both ends

7.8.4 Example of a Correct Topology

7.8.4.1 Control Unit of an lift Out of a Group

From the picture you can see the line structure and the terminations of the control unit of an lift out of a group. The car bus is blue and group bus red. Provided that the stub line to the inverter is shorter than 3 m, termination can be realised at the bp 308 as well. Termination on the car is done by means of a connected absolute encoder or a DIP switch (DIP 2 set to "on") on the CLK-03. Termination of the group bus at the end of the well is normally realised by activating the termination on the DIP switch of the last CAP-01/02 (DIP 2 set to "on").

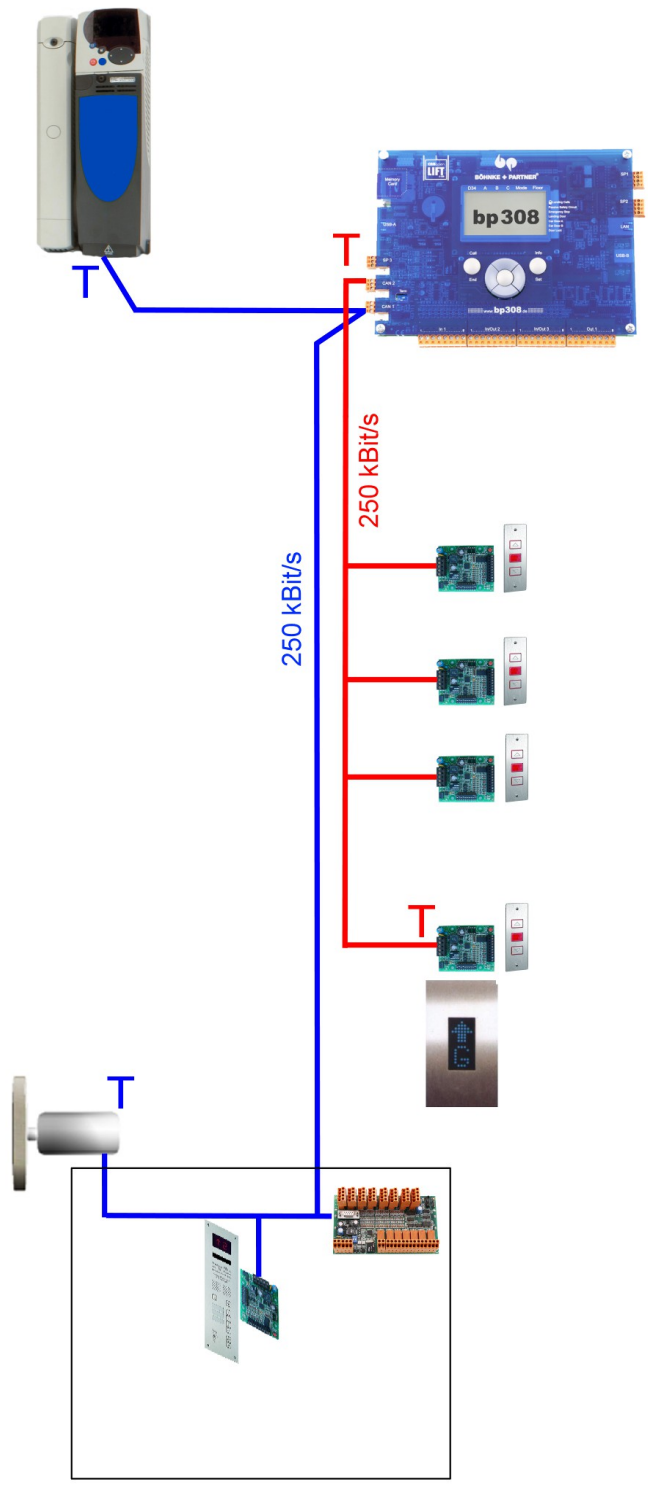


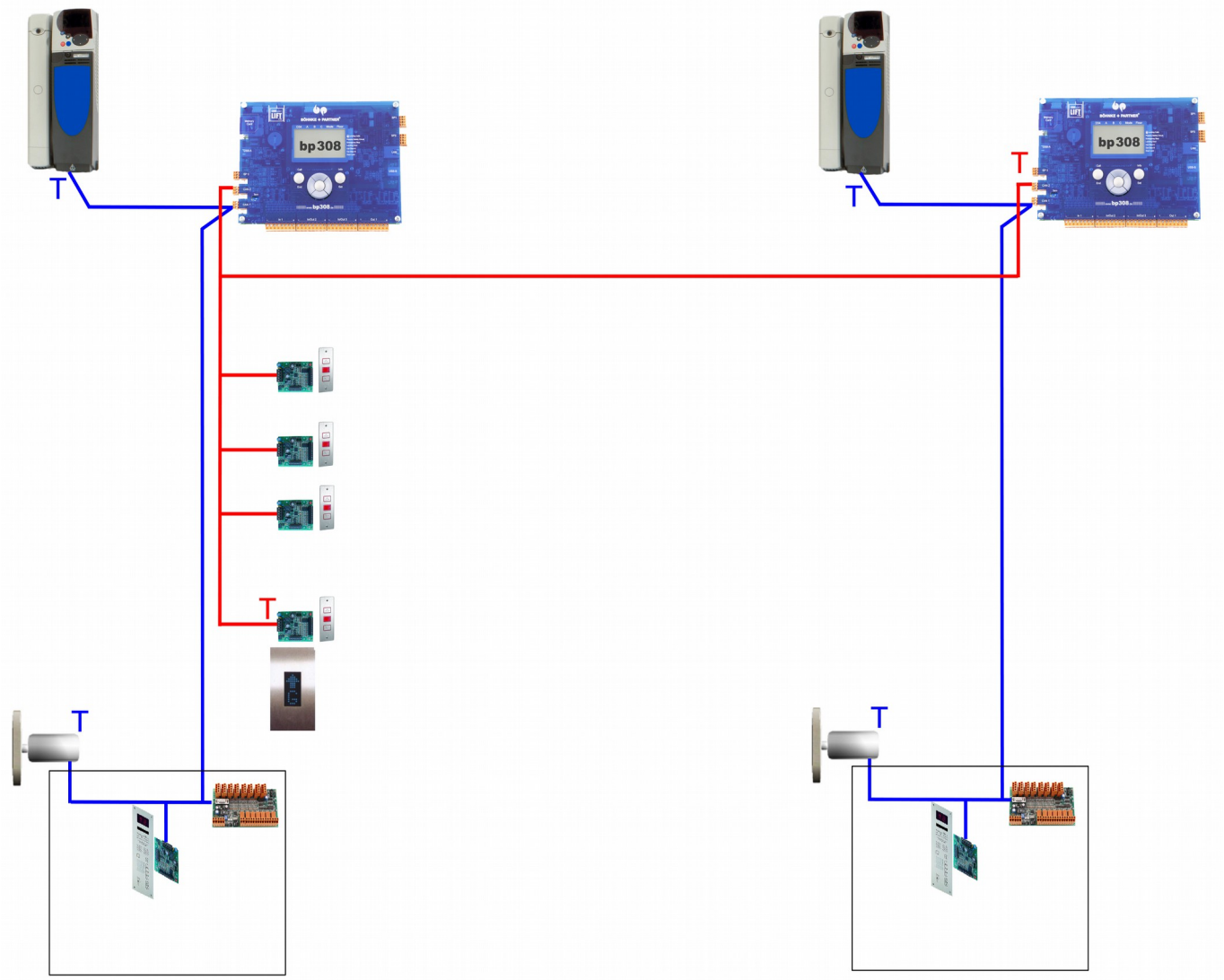
Fig. 43
Sample of the topology of a single lift .

7.8.4.2 Group of Two lifts in One Line

On the picture you can see the topology of a bus for the landing calls of a group of two lifts in one line. This is also a line structure with properly terminated ends

INFO!

Pay attention to the terminations while commissioning the lift. In most cases, a lift is first put in operation as a single unit and the connection to the group is realised later on. In this case, the terminations are to be adapted (refer to controls of a single lift).



▲ Fig. 44

Topology of a group of two lifts in one line only.

7.8.4.3 Group of Two lifts in Three Lines

On the picture you can see the topology of a bus for the landing calls of a group of two lifts in three lines. As the line structure cannot be realised for more than two lines, gateways are used in order that each single line forms a real line itself. The bus is terminated at each end.

INFO

Pay attention to the terminations while commissioning the lift. In most cases, a lift is first put in operation as a single unit and the connection to the group is realised later on. In this case, the terminations are to be adapted (refer to controls of a single lift).

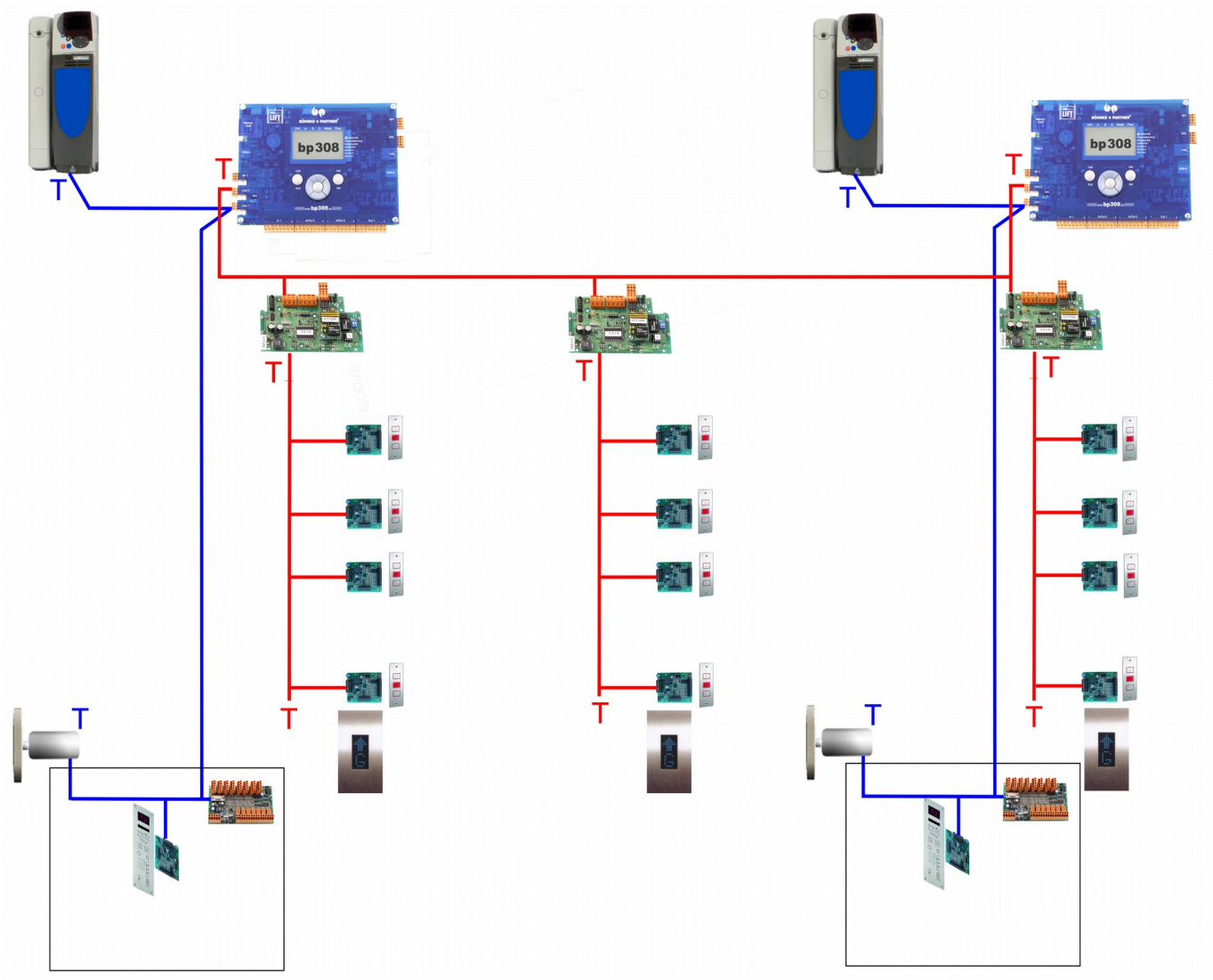


Fig. 45

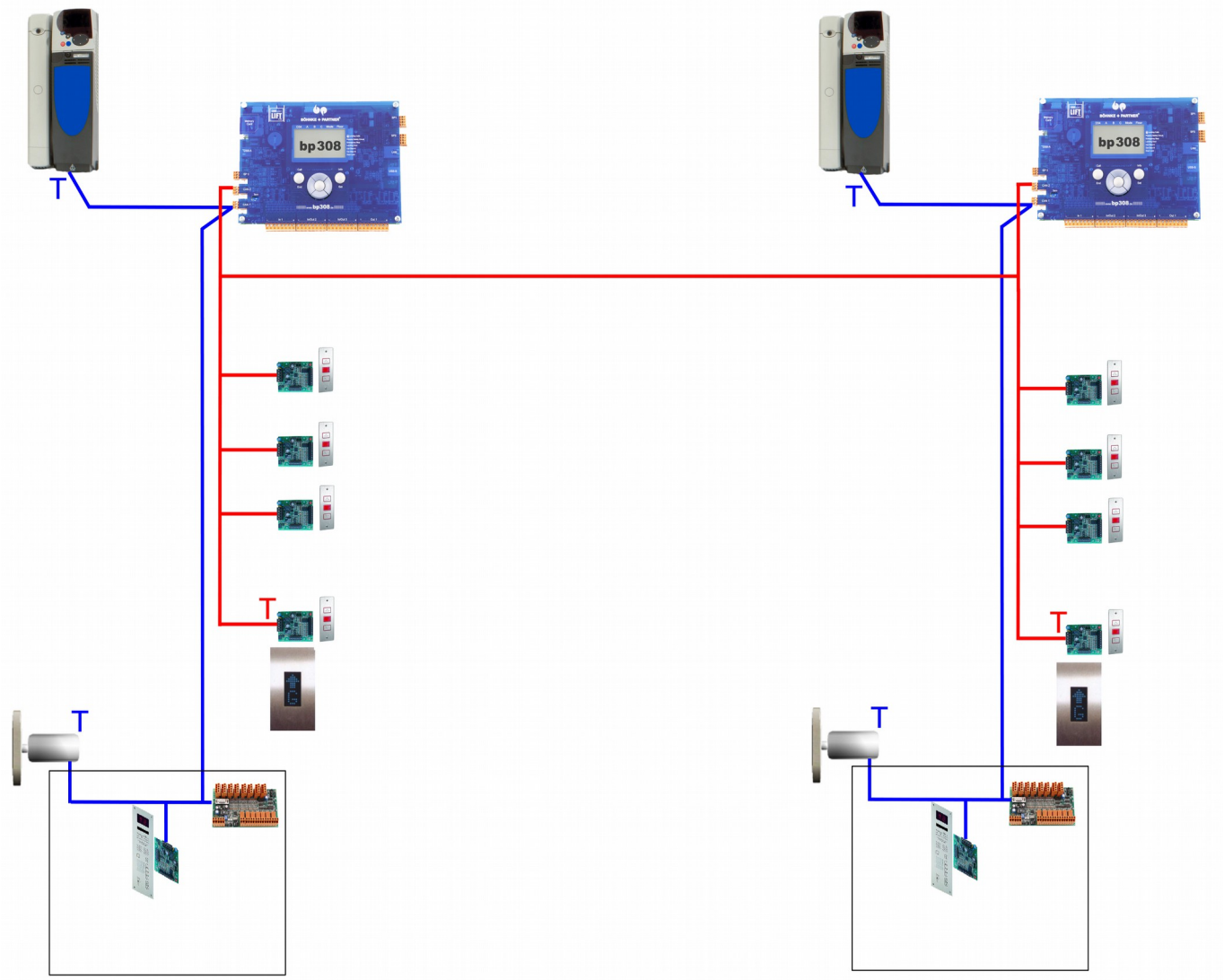
Topology of a bus for the landing calls of a group of two lifts in three lines.

7.8.4.4 Group of Two lifts in Two Lines

In the picture you can see the topology of a bus for the landing calls of a group of two lifts in two lines. The line structure is given by the terminations at both ends of the shaft.

INFO

Pay attention to the terminations while commissioning the lift. In most cases, a lift is first put in operation as a single unit and the connection to the group is realised later on. In this case, the terminations are to be adapted (refer to controls of a single lift).



▲ Fig. 46

Topology of a group of two lifts in two lines.

7.8.5 Pin Assignments

The CANopen standard stipulates the pin assignments of the most common plug connectors. The application profile for lifts recommends the following plug connectors for lift components:

- D-Sub 9pins
- RJ45
- Open-style-plug connector

7.8.5.1 Pin Assignment of D-Sub Plug Connector with 9 Pins

Pin	Signal	Description
1	-	Reserved
2	CAN_L	CAN-Bus-Signal (dominant low)
3	CAN_GND	CAN electrical ground
4	-	Reserved
5	CAN_SHLD	Optional shielding
6	GND	Optional electrical ground (from pin 9)
7	CAN_H	CAN-Bus-Signal (dominant high)
8	-	Reserved
9	CAN_V+	Optional external power supply (+24 V)

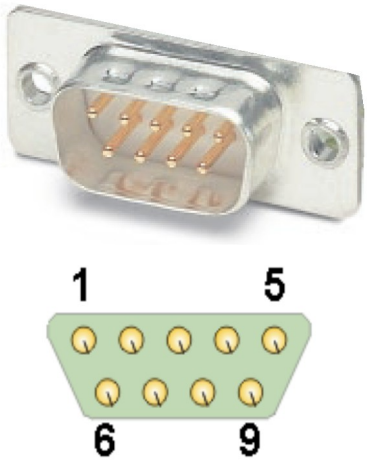
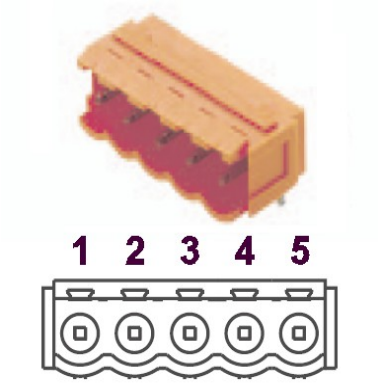


Fig. 47
D-Sub-Stecker 9pins

7.8.5.2 Pin Assignment of the RJ45 Socket Connector

Pin	Signal	Description
1	CAN_H	CAN-Bus-Signal (dominant high)
2	CAN_L	CAN-Bus-Signal (dominant low)
3	CAN_GND	CAN Ground
4	-	Reserved
5	-	Reserved
6	CAN_SHLD	Optional shielding
7	GND	Optional electrical ground (from pin 9)
8	CAN_V+	Optional external power supply (+24 V)

Fig. 48
RJ45-socket connector



▲ **Fig. 49**
Open-style-plug connector 5 pins

7.8.5.3 Pin-Assignment of the Open-Style-Connector

Pin	Signal	Description
1	CAN_GND	CAN electrical ground
2	CAN_L	CAN-Bus-Signal (dominant low)
3	CAN_SHLD	Optional shielding
4	CAN_H	CAN-Bus-Signal (dominant high)
5	CAN_V+	Optional external power supply (+24 V)

7.8.6 Node IDs of the CAN Components

Every CANopen component can be identified by a node ID that must be unambiguous within the CANopen network. If there are two components with identical ID connected to the bus, they cannot be selected by the system.

BÖHNKE + PARTNER assigns the node-IDs according to the recommendations of the SIG lift control (www.CANopen-Lift.org/wiki/Node-IDs) as per the following scheme.

Node-ID [dec.]	CAN1 Local bus	CAN2 well bus
1	bp308 - lift control unit	bp308 – lift control unit G1
2	Drive unit (frequency inverter)	bp308 – lift control unit G2
3	Reserved	bp308 – lift control unit G3
4	Sensor/positioning 1	bp308 – lift control unit G4
5	Sensor/positioning 2	bp308 – lift control unit G5
6	Door control 1 (door A)	bp308 – lift control unit G6
7	Door control 1 (door B)	bp308 – lift control unit G7
8	Door control 1 (door C)	bp308 – lift control unit G8
9	CDG-01 – Gateway	CDG-01 – Gateway 1
10	Reserved	CDG-01 – Gateway 2
11	Reserved	CDG-01 – Gateway 3
12	CLK-03 - car terminal box	CDG-01 – Gateway 4
13	Load-measuring device	CDG-01 – Gateway 5
14	Emergency call unit	CDG-01 – Gateway 6
15	Reserved (emergency call unit)	CDG-01 – Gateway 7
16	Cabin push button unit node 1	CDG-01 – Gateway 8
17-20	Cabin push button unit node 2 - 5	
21-70	CAP-01/02 - landing call units landings 1 to 50 (e.g. line 1 or door A)	
71-120	CAP-01/02 - landing call units landings 1 to 50 (e.g. line 1 or door B)	
125	Default node ID (preset of inventory components such as CAP-01/02 or CIO-01)	
126	Flash update bootloader	

BÖHNKE + PARTNER supply the lift control unit with all node IDs already present.

7.9 Travelling Cable to the Car Top Box

The car terminal box is connected by a travelling cable type 16G0,75+8x(3xAWG22)+3x(2xAWG22) C 4.7x79.1 sw. Please read the assignment of the wires from the enclosed circuit diagrams.

Wire	Terminal	Function
1	X92:4	Socket of terminal box
2	X92:LN	Neutral conductor light
3	X94:48	Photocell 230 V AC + power supply of door side A 230 V AC
4	X94:58	Photocell 230 V AC + voltage supply of door side B 230 V AC
5	X94:NN(N)	Neutral conductor controls + door sides A and B
6	X95:9	Feed line to passive safety circuit of safety gear contact
7	X95:11	Üridging of passive safety circuit of emergency control unit
8	X95:13	Return line from emergency stop
9	X95:16	Feed line to door contact
10	X95:17	Return line from door contact side A
11	X95:18	Return line from door contact side B
12		
13		
14		
15		
gr/ge	PE	Electrical ground
Violet	X96:1	Emergency cabin light (switch to negative)
Green	X96:2	Positive voltage of feed line to emergency light and alarm button
Blue	X96:3	Return line from alarm button
Violet	X97:20A	Voltage supply 24 V DC
Green	X97:20A	Voltage supply 24 V DC
Orange	X97:100	Voltage supply 24 V DC
Violet	X97:100	Voltage supply 0 V DC
Green		
Darkgreen		
Violet		
Green		
Brown		
Violet		
Green		
Grey		
Violet		
Green		
White		
Violet		
Green		
Red		
Violet		
Green		
Black		
White	X96:10	Telephone a
Blue	X96:11	Telephone b
Shielding	Electrical ground	Shield terminal

Wire	Terminal	Function
White	X912:a	SLP 485 a
Orange	X912:b	SLP 485 b
Shielding	Electrical ground	Shield terminal
White		CAN_H
Darkgreen		CAN_L
Shielding	Electrical ground	Shield terminal

7.10 Selection of the Frequency Inverter

There are three possibilities to select the frequency inverter with the bp308. Depending on the type of inverter, the unit can be selected by means of the CAN Bus, the DCP interface or by wiring in parallel with the controller/pre-control module RVM-01.

7.10.1 Selection by CAN Bus

If your inverter has got a CANopen interface according to the application profile CiA-417, you should interconnect it with bp308 via the CAN Bus. This way of selecting the inverter is the least complex as regards installation and configuration due to the fact that the standardised application profile enables plug-and-play to a certain extent as well as excellent diagnostics.

Connect the inverter to the CAN1 connector of bp308 according to the circuit diagrams enclosed. Lay the cables and terminate the bus lines in compliance with the instructions of section 7.8.4.

7.10.2 DCP-Connection to the Inverter

The DCP interface serves as a serial connection between lift control unit and inverter. It is an RS485 point-to-point connection.

The DCP interface is put on the top 3-pole plug connector on the left side of the BPC in bp308. The pin assignment is given in the following table.

7.10.2.1 Pin Assignment of DCP Plug Connector

Pin	Signal	Description
5	COM	Electric ground of the signal (optional)
6	B	Signal line RS485 inverted
7	A	Signal line RS485

Connect the signal lines to the corresponding terminals of the inverter. Optionally, you can connect the electric ground of the signal (please refer to manufacturer's manual of your inverter). The cable should be twisted and shielded. The shielding is to be installed on

one side of the inverter only. Ensure a full-surface connection (refer to section 7.3).The maximum cable-length for the DCP connection is 600 m.

7.10.3 Wiring in Parallel with RVM-01

The controller/pre-control module »RVM-01« selects all known inverters that do not feature the option of a serial interface. The control signals for the different speeds and directions of travel are put out via 7 potential free relays equipped with gold-plated double contacts to ascertain reliable switching for every possible demand on the inverter.

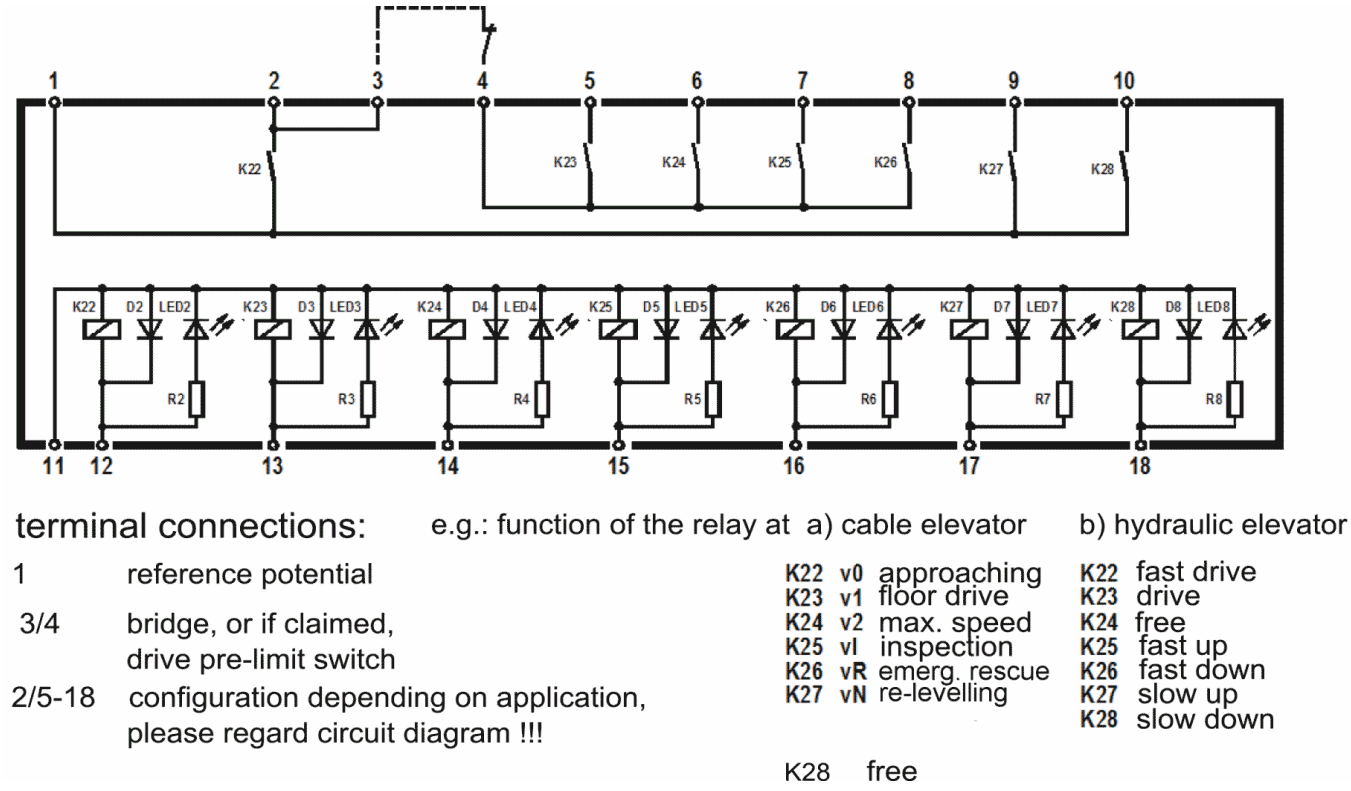


Fig. 50
The circuitry of the RVM-01 module.

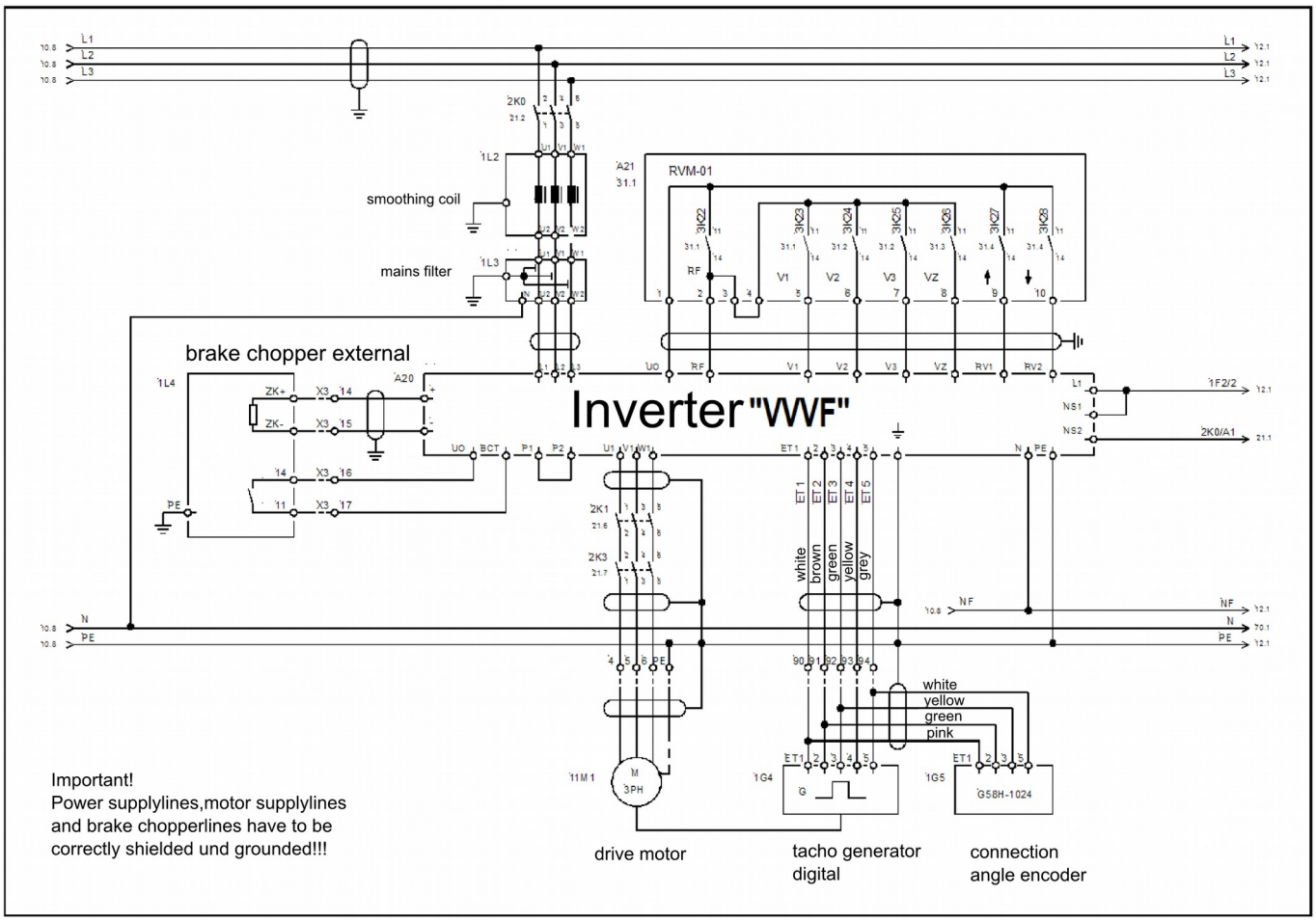


Fig. 51

Example of a selection of the inverter by RVM-01.

Control inputs (example)

GND	Reference potential
UO	Control voltage of the inverter voltage output selecting the inputs
RF	Controller enabling, to be in selected status during travel .
V1	Fine positioning speed
V2	Levelling speed
V3	Travel speed
VZ	Re-levelling speed
RV1	Direction default 1 UP
RV2	Direction default 2 DOWN Provided that the inverter has been connected according to the switching circuit suggestion, the factory preset motor turns left if input »RV1« is activated and right if »RV2« is activated (as seen from the motor side of the shaft.
ZE1	Additional speed V_ZE1
ZE2	Additional speed V_ZE2

Preferably, these additional speeds are to be used for inspection and emergency operations.

ZE3 Additional speed V_ZE3
This input may activate different functions of the inverter, to be preset in the menu INTERFACES. The additional speed V_ZE3 was selected a factory.

BCT Brake chopper temperature. At this input, you can monitor the temperature switch or the malfunction output of the brake chopper.

7.11 Installation of the Absolute Encoder

The absolute encoder is equipped with a 9-pin D-sub plug, the assignment of which conforms with the CANopen standard. The CAN Bus is terminated in the AWG-05 CANopen (type GXP5W.Z06).

If the absolute encoder has been mounted on the car, its connecting cable can be plugged directly into the socket on the CLK.

If the absolute encoder is installed in the shaft head, its connecting cable can be plugged into the respective socket in the control cabinet.

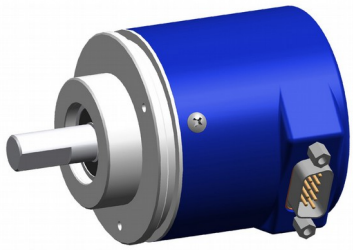


Fig. 52
The absolute encoder AWG-05 CANopen (type: GXP5W) can be mounted in the well head or on the car.

INFO
Some types of position systems always terminate the can bus. If the position system is mounted and connected on the car, termination via the DIP switch 2 has to be deactivated on the CLK-03. You can find information on terminating devices in their accompanying manuals or online at www.CANopen-Lift.org

7.12 Interconnection of the Group

By means of the interconnection of the group, the lift control units communicate with each other and transmit the well signals.
The connection »CAN2« serves as an interface for the interconnection of the group. The data lines must be twisted. They lead from the terminals of the BPC to the terminal strip of the lift control unit. Connection to the other members of the group is given by a plug connector

The lines of the well signals are connected to the group as described in the »Topology« section. If the shaft signals have been connected to the control units in a conventional manner, they are translated into CANopen data by components such as.

7.13 Data Lines to the Remote Diagnostics System

Remote diagnostics can be realized via different mediums, each subject to different rules.

7.13.1 Analogue Telephone Line

▲ Fig. 53
56K Hardware USB modem, e.g. from *LONGSHINE, US Robotics* or *MANHATTAN*

If remote diagnostics are to be carried out via an analogue telephone connection, the data is transmitted via an analogue modem, which can be connected to the USB-A slot of the BP308. This has to be a "real" hardware modem and not a software modem. The USB modems for the bp306 supplied by BÖHNKE + PARTNER are "real" hardware modems. The modem must also support the V.250 standard. If more than one control unit is allocated to a joint telephone outlet or if there is an emergency call system that uses this analogue telephone outlet as well, you have to use an emergency call manager (refer to the "Connection of the Emergency Call System" section).

7.13.2 ISDN

If there is an ISDN connection available for the data remote diagnostics, the integrated ISDN module (option ISDN) is used or an external ISDN interface.

7.13.3 Ethernet

If data remote diagnostics is to be carried out via an Intranet or the Internet, an Ethernet interface is usually available in the machine room. Use the integrated Ethernet module of the bp308 in this case .

7.13.4 LON

Connection to a LONworks network – e.g. within the building automation system – is carried out via the ASBuP interface. It is connected to the optional SP1 connector of bp308 as well as a RJ45 plug to the LON network.

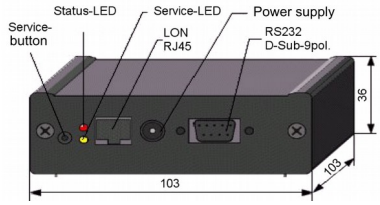


Fig. 54
The LON-Interface ASBuP for connecting the lift to a LONworks network.

7.14 Installation of the Emergency Call System

Emergency call systems mostly require analogue telephone connections. If a separate analogue connection is available especially for the emergency call system, wiring can be implemented as specified for the emergency call system. Most of the time, however, the emergency call system and the modem of the control unit have to share one telephone line. In this case, it has to be ascertained that the emergency call system is given priority. Some emergency call systems place a through-connected extension at the disposal of a data remote monitoring system as long as no emergency call is at hand. If there is no such extension available on the emergency call system, a so-called emergency call manager has to be applied that interrupts an existing connection to the data remote monitoring system in case of emergency and renders the freed telephone connection available to the emergency call system.
Generally there is no valid scheme of how to install an emergency call system. Please read the circuit diagrams and documentation concerning the emergency call system, which you can find enclosed.

8 Commissioning Instructions

ATTENTION!

The control systems of BÖHNKE + PARTNER and the drive system must not be commissioned before having fulfilled the following conditions:

- The control unit has been mounted and installed according to this manual.
- Operating and setting possibilities are all known (see user manual bp308).
- The valid EMC rules (electro-magnetic compatibility) are complied with!
- The power circuit, control circuit and safety circuit have been connected and checked according to this manual (see check-list).
- Instructions that also have to be followed when commissioning the system:
  - First Travel with Emergency Controls (section Fehler: Referenz nicht gefunden),
  - First Travel with Inspection Controls (section Fehler: Referenz nicht gefunden),
  - First Travel with Normal Operation Controls (section Fehler: Referenz nicht gefunden) and
  - Commissioning of the Floor selector System (section Fehler: Referenz nicht gefunden).

INFO!

You must read the supplementary instructions prior to commissioning any specially designed systems and components.
After commissioning, the actual parameters must be documented in the printout of the setup and service menu or an up-to-date printout has to be saved to a storage medium (memory card, USB stick). Malfunctions stored during commissioning (malfunction stack memory/malfunction list) can be deleted in the sub-menu »diagnostics«. If third persons have access (e.g. janitor), protect the menus against unauthorised access by using a setup and a service code number (minimum four digits).

CAUTION!

Prior to each travel the operator has to ascertain that neither persons nor property are endangered.

The final inspection and approval must be carried out in compliance with the »Technical Tips« (Section Fehler: Referenz nicht gefunden).

8.1 Preparation

No special measuring instruments are required for commissioning on site except a multimeter. It is recommended to use the voltage test module STM-02.

8.2 Voltage-Test Module STM-02

▲ **Fig. 55**
Voltage-test module STM-02. It protects the control unit against over-voltage.

To protect your lift control unit against damage from excess voltage while installing or repairing it, use the voltage test module STM-02 especially designed for this purpose.

INFO!
For monitoring purposes, integrate the voltage test module in the control unit for the time of commissioning. Remove it as soon as commissioning is finished. You can use it for further operations.

8.2.1 Prior to the First Switch-on

According to VDE 0100 (standard from VDE (association of German engineers) and TRA (German Safety Regulations for lifts), the control circuit has to be earthed. For that reason, the »PE«-terminal of the lift control unit is connected to terminal 100 of bp308 by a green/yellow conductor.

CAUTION!
Make sure that the lift system does not carry any voltage!

- Disconnect the green/yellow protective earth conductor from terminal 100 of bp308. The negative potential of the control circuit now must not have any contact with the PE potential of the control unit at any point whatsoever in the lift system.
- You must therefore ascertain before connecting the STM-02 device that there really is no connection between the PE terminal of the lift control unit and terminal 100 of bp308. Use an Ohm-meter or a circuit continuity tester.
- After having completed these checks, you can connect the voltage testing module STM-02 as shown in the diagram enclosed. Connect conductor 1 to terminal 100 in bp308 and conductor 2 to terminal 20A of the terminal strip in the control unit.

Now you can start your installation or repair work.

8.2.2 Functional Description of Voltage Test Module STM-02

As soon as STM-02 has been installed properly, the control circuit 24 V DC is not earthed. With the lift system switched on, any over-voltage within the control circuit towards »PE« does not result in a fault current, removing the risk of bp308 components being destroyed .

CAUTION!

- STM-02 signalises over-voltages in the control circuit with an LED and a buzzer. At that moment, there is danger in the area of the control voltage.
- If STM-02 signalises a fault, switch the lift off at once, find the fault and eliminate it.

The fault message is stored by a bistable relay and remains in memory even if the control voltage is switched off and on again. To reset the unit to its original mode after rectifying a fault, press the reset button on the casing of STM-02 .

CAUTION!

- Immediately after finishing all work, connect the green/yellow PE-line to terminal 100 within bp308 again!
- Remove STM-02 from the control unit.

8.3 Technical Tips Concerning the Control Unit

5. Error-free and safe operation of the product is subject to appropriate transport, storage, erection and installation as well as to careful operation and maintenance.
6. The control unit has been designed, manufactured and tested in accordance with DIN EN 81 and the VDE regulations. You must adhere to the relevant regulations for the commissioning of electric control unit and operating devices. You should also follow the local lightning protection rules. Each control unit comes with circuit diagrams and technical documentation clearly identified by the control unit number.
7. The control system bp308 exclusively serves as an information processing device within the lift control system. All control signals

are processed by positive circuitry. The safety rules DIN EN 81 are not infringed by electronic data processing.

8. The control system bp308 was examined by the relevant authorities and has been awarded an EC type examination certificate. In section “Product Certifications” you can see this EC type examination certificate and in section 3.3 the declaration of conformity according to the EC Directives (95/16/EC) stating that the component applied conforms to the regulations.
9. The components of the control systems conform with DIN EN 81 as well as VDE 0100 / 0101 / 0551 / 0660 and BGV A2. The control cabinets conform to the installation standards VDE 0660 / part 500.
10. Mains and auxiliary contactors used in the control systems comply with DIN EN 81 part 1, 13.2 as well as VDE 0660, but at least equipment class D3.
11. Voltage fluctuations are permissible if they range within a tolerance of +10% to -20% normally guaranteed by the utility company .
12. Damages for malfunctions caused by an impermissible voltage rise may not be claimed from the manufacturer.
13. Particularities related to the use of an uninterruptable power supply unit (UPS) are to be observed. First read the according operation before commissioning connected UPS as the unit has to provide a safe power supply to all necessary control functions. Regularly check the uninterruptable power supply unit with regard to proper functionality and error-free operation .
    Adhere to the instructions of the unit’s manufacturer .
14. Isolation and short-circuit measuring:
    1) Since 1 January 1996, every control unit has been equipped with an attenuation filter that might, however, be damaged while measuring the isolation. Ensure that fuse 1F2 is switched off prior to measuring the isolation in the safety circuit.
    2) Any uninterruptable power supply unit integrated in the control unit has to be disconnected completely and the contacts bridged accordingly in the control unit before measuring the isolation and short-circuits .
    3) Adhere to the safety instructions applicable to isolation measuring as there is danger to you and the equipment .
15. All relays and contactors integrated in the control system must be radio-shielded.

16. In-built motor protection switch, over-current release, current-operated circuit breaker etc. have been set at factory and have to be individually adapted to the appliances connected by you while commissioning the control system .
17. According to the respective operation instructions, the following wiring instructions are to be followed:
    Conductor N (N) to terminal 9 of bp308.
    Conductor N (N) to terminal 14 of bp308.
18. According to VDE-rules and TRA 200, the signal voltage (minus 24 V DC) is to be connected to the protective earth conductor (PE) of the mains supply .
    - Terminal 100 (minus 24 V DC) of bp308 is to be connected to the PE terminal in the control unit, thus avoiding a floating network and making it possible to recognize an earth leakage of the signal voltage (+24 V DC) at once .
    - Transformers are connected to the earth at the secondary side (e.g. special voltage of brake or valve) thus avoiding a floating network and making it possible to recognize an earth leakage of the secondary voltage at once.
19. Terminals 20A and 20C (+24 V DC max. 2.2 A) of bp308 are monitored with regard to overload and short-circuit. Overload is signalised by the LCD.
20. Safety circuit and query-unit of bp308 are fused at max. 1 A.
21. Pay attention to the control pulse-diagram. Presentation of the pulse-lugs is not true to scale. It is just a schematical diagram .
22. Arrangement of the shut-down points in the landing area (landing level zone) is to be observed precisely.
23. Signals from the pulse-generator and flush-level switches can be monitored on the LC display in the service-menu, sub-menu well signals, not only in the travel mode but also in the inspection control mode or emergency control mode.
24. It is possible to keep the car door closed at the landings during maintenance and service activities. See service-menu, sub-menu maintenance, on the LCD.
25. During checks, the car can be driven to the top or bottom landing by activating the »Call« switch:
    Switch up: car travels to top landing,
    Switch down: car travels to bottom landing.

26. In the inspection control mode, terminals 101 and 102 of bp308 and/or CLK-01 lose their current (see DIN EN 81, 14.2.1.3):
    - All cabin and landing calls are deleted and blocked ,
    - Doors cannot be opened, automatic door movement is disabled,
    - High travel-speed is automatically reduced at the correction switch,
    - The travel is stopped at the flush-level switch of the terminal landing,
    - The re-levelling device is switched off,
    - The homing function of hydraulically operated lifts is disabled.
    - Emergency controls are disabled .
27. In the emergency control mode, terminal 102 of bp308 loses all current :
    - All cabin and landing calls are deleted and blocked, ,
    - Doors cannot be opened, automatic door movement is disabled ,
    - High travel-speed is automatically reduced at the correction switch.
    - The flush-level switch of the terminal landing can be over-travelled in the emergency control mode!
    - See service-menu, sub-menu maintenance, on the LCD.
    - The re-levelling device is switched off,
    - The homing function of hydraulically operated lifts is disabled.
28. If the emergency control and inspection control are switched on simultaneously, the car cannot be moved.
29. Switching the landing controls with switch S85 deletes all cabin and landing calls, landing calls are blocked, but cabin calls are still accepted.
30. If landing controls are switched off, the parking landing is also ineffective.
31. Light voltage disruptions are monitored by the control unit. If it fails, the moving car is stopped and remains at the landing with open door.
    Further travels are blocked .
    If it is a hydraulically operated lift, it sinks down to.
    the home landing. The inspection and emergency control.
    remain operational as well as the re-levelling device (refer to DIN EN 81, 8.17.3)
32. PTC monitoring uses positive temperature thermistors wrapped up in the coil of the A.C. motor to protect the motor. The monitoring circuitry integrated in bp308 monitors the operating temperature of the motor.
33. Die PTC threshold values are monitored and processed by a follow-up circuitry.
    a) Temperature normal value<2.2 kOhm = normal operation ,

b) Temperature too high value>2.7 kOhm = PTC thermistor has responded, refer to fault messages

Settings in the setup menu:

Rope traction lift

Immediate stop without switch-off

Stop at next flush-level switch ahead without switch-off

Immediate stop with switch-off

Stop at next flush-level switch ahead with switch-off

Hydraulically operated lift

Stop with return without switch-off

Stop without return without switch-off

Stop with return with switch-off

Stop without return with switch-off

34. The error message concerning excess motor temperature is stored in the batch memory and malfunction list. If the data remote monitoring system is connected, it immediately reports this malfunction to the service centre.
35. The homing function of hydraulically operated lifts to the bottom landing during normal operation, i.e. all safety functions, are OK ,

a) If it is automatically initiated after the preset period (max. 15 min.).

b) If it is automatically initiated as soon as the control unit is switched off. (e.g. remote switch-off).

c) If it is automatically initiated after the preset period (max. 15 min.) after switching off the landing controls.

- In all three cases [a), b), c)], the creeping correction system remains operational (see DIN EN 81 part 2 , 14.2.1.5)
- When the car arrives at the bottom landing, the door opens and closes in all three [a), b), c)] cases. The »door open« button remains active at all times.
- The cabin light can be switched off in idle condition and with the door closed; this function is adjustable to 1, 10 or 30 minutes. The cabin light is switched on as soon as the lift resumes operation.

36. Activation of the top emergency limit switch of a hydraulically operated lift shuts down the lift at once. If the car frees up again through subsequent creeping, the normal functions remain switched off and the car is returned to the bottom landing at once, as long as the safety circuit is closed. The car door opens and closes again and the car parks at the bottom landing and does not accept any call. The »door open« button remains active at all times.
37. The creeping correction system remains operational. (see DIN EN 81 part 2 , 14.2.1.5)

38. On hydraulically operated lifts, the creeping correction system is activated as soon as the runtime monitoring is activated (terminal 42 = 1) and the lift is immediately shut down .
39. On hydraulically operated lifts, the anti-creep monitor is queried as follows :

    a) the up-creeping monitor automatically causes the car to be returned to the bottom landing and shut down there. If the runtime monitoring responds outside the landing area zone during this action, the lift is blocked at once and the creeping correction system is not activated as the first malfunction registered was »up-creeping monitor«.

    b) the down-creeping monitor causes the lift to be shut down at once. The creeping correction system remains operational.
40. The creeping correction system remains operational if a hydraulically operated lift is overloaded.
41. The overload input is queried at standstill only (terminal 88).
42. The excess pressure switch of a hydraulically operated lift is connected to terminal 35 and queried at this terminal as well. The basic menu offers − depending on the function − the option to select or deselect shut-down in case of excess pressure. The circuit diagrams also remind you of this option
43. A hydraulically operated lift can principally be equipped with an emergency circuitry down (similar to emergency circuitry »up only«). If an emergency circuitry down is installed, the following switches may be bridged: shortfall in pressure, pipe rupture, bottom limit switch and safety gear contact.

CAUTION!

A combined safety gear contact/slack rope switch must not be bridged, nor any other switch. The following applies for the emergency circuitry »down«:

a) The bottom emergency limit switch must not bridged !

b) An emergency circuitry »down« must not be applied in lifts with 2:1 suspension without slack rope switch!

ATTENTION!

Operating instructions and labels on the emergency circuitry unit must inform about risks !

Example: A defective hydraulic hose or a defective threaded hose coupling causes the hydraulic oil to be pumped into the shaft pit!

44. The hydraulically operated lift must conform to all stipulations set out in the relevant local "water protection regulations"!

45. Runtime monitoring is a standard function in every lift control unit. To check this function, proceed as follows (DIN EN 81, part 1, 12.10 and part 2, 12.12):
Floor selector using magnet switches
a) Stop the car at the bottom landing,
b) Disconnect pulse transmitter from S75 and S77,
c) Enter travel command to top landing ,
d) Car passes by the pulse transmitters without receiving the necessary signals,
e) After the preset time interval (max. 45 s), the electronic monitoring device of the lift control unit automatically interrupts the travel,
f) Afterwards, the lift control remains blocked for further travels (see information on LCD),
g) Connect pulse transmitter again to S75 and S77,
h) Operate call button (call/end) and confirm with OK to unblock the car; alternatively, switch the control unit off and on again.
i) The control unit is now operational again.

46. Floor selector using an absolute encoder
a) Make the car stop at the bottom landing,
b) Reduce the set runtime of the runtime monitoring in the control system (LC display) corresponding to the travel speed,
c) Enter travel command to top landing,
d) The car does not reach the next encoding point within the runtime period,
e) After the preset time, the electronic monitoring function of the lift control automatically interrupts the travel ,
f) Afterwards, the lift control remains blocked for further travels (see information on LCD),
g) Set the runtime of the runtime monitoring in the control system (LC display) to a value corresponding to the travel speed,
h) Operate call button (call/end) and confirm with OK to unblock the car; alternatively, switch the control unit off and on again.
i) The control unit is now operational again.

47. The creeping correction system of a hydraulically operated lift remains operational, even if the runtime monitoring has responded .

ATTENTION!

48. The motor will be damaged if due to a phase failure (e.g. contact problems of the travel contactors) the creeping correction system (re-levelling) remains operational although the runtime monitoring has responded .

INFO!

1) We have preset the parametrisable program runs, time intervals, etc. of the control systems in the setup menu and the service menu according to the technical specification. to the local requirements. While commissioning the lift controls, you must set the parameters according to the appliances installed and conforming to the local requirements.

2) The company installing the equipment has the duty to exercise care in setting the correct parameters. Pay attention to the local regulations stipulated by the fire-fighting experts for fire brigade lifts and fire emergency lifts.

3) The setup menu as well as the service menu can be blocked by a 4-digit code. The codes protect the parameters from being unintentionally reset and must be stored with utmost care. Disclose the codes to authorised persons only.

49. To safeguard the individual parameters of the lift, call up the store system data parameters sub-menu in the setup menu under various.
50. Conclude the setting by pressing the END button after having entered the changes in the function menu of the LCD, then return to the basic display of the LCD.

8.4 Checks before Starting the Control Unit

CAUTION!

- Work through this check-list after installing a new control unit or refurbished an existing one.
- Only continue if you have answered the current question with »Yes «.

Weight balancing between car and counterweight has taken place.	Yes □
The mechanical brake has been adjusted.	Yes □
The car is positioned at a sufficient distance from the limit switches (minimum 1 m).	Yes □
Mains voltage of 3 x 400 V AC is available.	Yes □
Buffers have been mounted and are functioning.	Yes □
Speed governor and safety gear have been mounted and are functioning.	Yes □
Safety circuit contacts of well and car have been mounted and installed.	Yes □
Have you paid attention to the safety instructions in section 2 "Safety Information" and followed them ?	Yes □

The control unit made by Firma BÖHNKE + PARTNER comes with: • circuit diagrams, unambiguously identified by the serial number of the control unit (e.g.: : 93401) • Parts lists, EC type examination certificate and declaration of conformity for System bp308, • Terminal plans, • Basic settings, • Port assignment plans and general tips concerning the control system bp308. Are these documents complete?	Yes □
Have you followed the circuit diagrams that belong to the control unit	Yes □
Have you paid attention to the safety instructions in section 7.2 'Interference Suppression and Hints" and followed them?	Yes
Have you checked that all terminal points are correctly and tightly connected?	Yes □
Have you turned off the main switch ?	Yes □
Have you connected the voltage test module STM-02 (see section Fehler: Referenz nicht gefunden)?	Yes □
Check the voltage supply! Have L1, L2, L3, N and PE been properly connected (clockwise rotating field)?	Yes □
Does the cross section of the conductors correspond to the power draw of the lift system?	Yes □
If there is a load switch, have you checked whether the admissible fusible elements are installed as well?	Yes
Is the automatic circuit breaker 1F2 for the control voltage switched off? Is the automatic circuit breaker 1F4 for the safety voltage switched off?	Yes Yes
Have the power supply lines been correctly fused?	Yes □
If there is a quick activation circuitry available for the brake, have the protection switches been turned on?	Yes □
The motor protection switch, over-current activator, FI protection switch, phase monitor etc. installed in the monitoring unit can only be pre-installed by BÖHNKE + PARTNER. When commissioning the system, you have to set them to the values suiting the appliances connected. Have you set these values?	Yes □
Have all the PE conductors been connected properly?	Yes □
Have you complied with all interference suppression measures and EMC instructions of the frequency inverter manufacturer?	Yes □
Have you followed the commissioning instructions concerning speed and drive controls?	Yes □
Has the emergency control unit been switched on?	Yes □

If you have answered »yes« to all these questions, you may switch in the mains voltage according to the instructions in the following section.

8.5 Switching the Mains Voltage

If you have answered »Yes« to all the questions of the »Checks before Starting the Control Unit«, you can switch the mains voltage in. After that, check the items of the following check-list.

Have you turned on the mains switch?	Yes □
Has the emergency control unit been switched on?	Yes □
Is the automatic circuit breaker 1F2 for the control voltage switched on?	Yes □
Is the automatic circuit breaker 1F4 for the safety voltage switched on?	Yes □
Have all the safety components remained inactive?	Yes □
Is the voltage test module STM-02 not sending out any acoustic or optical warning signals ?	Yes □
Does the LCD show no problem with the voltage in the bp308 system ?	Yes □
Does the voltage in the power supply unit of bp308 between terminals L and N = 230 V AC?	Yes □
Does the voltage at the terminal strip X4 between terminals 1 (LS) and NN = 230 V AC?	Yes □
Does the voltage at terminal strip X8 from terminal 20 (A or C) towards terminal 100 = 24 V DC?	Yes □
Does the LCD illumination fail to flash? (Would mean that system is shut down)	Yes □
Does the colon of the LCD clock of bp308 flash?	Yes □
Does the cabin light voltage at terminal strip X2 between terminal 1 and = 230 V AC an?	Yes □
Are the two LEDs for 5 V and 24 V of the power supply unit of bp308 bright?	Yes □
Does the display of bp308 show the ERO symbol (emergency control active)?	Yes □

If you have answered »Yes« to all these questions, you can proceed with checking the parameters of the control unit and the drive unit

8.6 Checking the Parameters of Control Unit and Drive Unit

After having properly switched in the mains voltage and made sure that there are no obvious faults, check the parameters set for the control unit and the drive unit.

Carry out the drive unit check according to the relevant commissioning documentation.

The documentation of the control unit is accompanied by a hard-copy of all parameters set at factory by BÖHNKE + PARTNER. Check whether they correspond to the particularities on site. If necessary, adapt the parameters on the display of the bp308 (refer to user manual bp308.

8.6.1 Checking the Bus Lines

A first impression of the functions of the CAN Bus can be read from the diagnostics LEDs located at the left side of the display of the BPC.

For each bus connection there is a LED glowing red on the printed circuit board, CP1 for CAN1 and CP2 for CAN2. The LEDs demonstrate the actual operational mode of the corresponding bus. You can read the status of the LED and its meaning in the following table. While the system starts, both luminous diodes shine for a short moment. Both diagnostics LEDs must go out afterwards.

Status	Meaning
Off	CAN-Bus: no error
1 puls	CAN-Bus: warning
2 pulses	CAN-Bus: malfunction
On	CAN-Bus: bus-off (out of oper., after appr. 10 s auto reset)
Flashing	Node-ID error: duplicate node ID in network

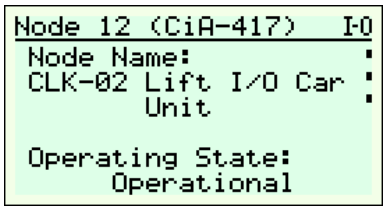
Table 1: Meanings of the CAN diagnostics LEDs on the BPC.

8.6.2 Checking the Bus Termination

As mentioned in section 7.9 "Installation of the Bus", the bus must be terminated at both ends. Check both car bus and group bus to make sure that they have properly terminated ends.

INFO!
Some types of position systems always terminate the can bus. In such case, the termination on the CLK-03 has to be deactivated with the DIP switch. You can find information on terminating devices in their accompanying manuals or online at www.CANopen-Lift.org

8.6.3 Checking the CAN Parameters



▲ Fig. 56
A CLK unit correctly booted up connected at the CAN-bus.

To check the CAN parameters of the control unit, call up the setup information or the setup menu of the control unit. In PARAMETERS → TERMINALS → TERMINALS CAN1/2 you can find a list of all connected CAN devices. Check if the devices that are to be used in your system have been activated

.

As all CAN devices are pre-configured upon delivery of the control unit, you need not set further parameters at this point. If you combine a control system from OEM components, you may optionally purchase a USB CAN adapter for the PC and CANwizard®« software for parametrising the CAN devices. You can, however, also configure the input and output terminals on the control display. Learn more about CANwizard® and the configuration of devices in the CANwizard manual and at www.CANwizard.de.

If all devices have given correct feedback, you can start the first travel with emergency controls.

▲ Fig. 57
Example of a IXXAT USB to CAN adapter used for configuring CAN components.

8.6.4 Checking the DCP Connection

If the inverter is selected via a DCP interface, the following items are to be checked:

- Does the wiring comply with the circuit diagrams,
- Has bp308 been set to the correct drive/inverter type,
- Has the DCP interface been activated in bp308 and in the inverter,
- Have both units (control and drive) been set to the same protocol (DCP3/DCP4+),
- Are there no malfunctions at present.

8.7 First Travel with Emergency Controls

The emergency control is used for moving the lift during installation and maintenance work.

CAUTION!
Pay attention to the safety instructions in section 2.2 "Safety Information“. For your personal safety it is important that the switches of emergency control, inspection control and emergency stop as well as buttons up and down have been wired into the safety circuit as stipulated in the wiring diagram.
Emergency stop, door and locking contacts must not be bridged!
This ensures that any interruption of a contact, either emergency, door or lock, immediately stops the lift.

If the emergency control switch is on, the terminals X5.15 and X12.102 must be dead and terminal X7.101 live.

Correction switches S71 and S72 must be fitted at the right deceleration point at the terminal landing and switch reliably.
If either switch up or switch down of the emergency control is activated, the contacts of the safety circuit must either be closed or bridged by the switch of the lift control.

Travel commands are controlled and monitored by the control system bp308.

If a photocell is integrated, terminal X7.53 (door B: X7.56) must be live.

The command key (emergency control switch) is located in the door of the control cabinet in the machine room (see DIN EN 81, part 1, 14.2.1.4).

INFO!
During the first travel with emergency controls, check under DIAGNOSTICS > SIGNALS > WELL SIGNALS if the indicated speed corresponds with the speed shown on the inverter. If both speeds mismatch, check the conversion factors of both systems.

INFO!
If the inspection control unit is switched on, it overrides the emergency control unit (see DIN EN 81, part 1, 14.2.1.3 and 14.2.1.4).

If the control unit is made by BÖHNKE + PARTNER GmbH, preference is also given to the inspection control when the car or door can-

not be moved any more, with the inspection control turned on and the emergency control switched in and vice versa.

The emergency control functions are essentially the same as those of the inspection control, but the following safety devices are bridged:

- Speed governor,
- Buffer contacts,
- Emergency limit switches,
- Safety gear contact, and
- Minimum pressure switch of hydraulically operated lifts.

The car can be driven from the limit switches, if the inspection control is switched off and the emergency control switched on.

Switching the emergency control deletes all existing calls and disables the push buttons for cabin calls, landing calls and superior control functions.

If the control unit is not equipped with an absolute encoder, a correction travel is required as soon as you have returned to normal operation. Enter a call for that purpose.

8.8 First Travel with Inspection Controls

The inspection control is used for moving the lift during installation and maintenance work.

CAUTION!

Pay attention to the safety instructions in section 2 2.

For your personal safety it is important that the switches of emergency control, inspection control and emergency stop as well as buttons up and down have been wired into the safety circuit as stipulated in the wiring diagram.

Emergency stop, door and locking contacts must not be bridged!

This ensures that any interruption of a contact, either emergency, door or lock, immediately stops the lift.

If the inspection control switch is on, the terminals X5.15, X7.101 and X12.102 must be dead.

Correction switches S71 and S72 must be fitted at the right deceleration point at the terminal landing and switch reliably.

If either switch »Up« or switch »Down« of the inspection control is activated, the contacts of the safety circuit must be closed.

Travel commands are controlled and monitored by the control system bp308. All safety circuit devices remain operational. If any of the contacts in the safety circuit are interrupted, the lift is shut down immediately. If a photocell is integrated, terminal X7.53 (door B: X7.56) must be live.

The inspection control is situated on the roof of the car. Switching the inspection control on disables automatic door functions and also

automatic lift operation. Moving the car and the door is only possible by activating the command buttons of the inspection control unit (dead man's circuit) in absence of the emergency control functions (either switched off or not installed). In addition, activation of a stop button, which can only be returned to its original position by turning it, can cause an emergency stop. The limit switches prevent the car from over-travelling the terminal landings.

INFO!

Switching on the inspection control overrides the emergency control (see DIN EN 81, part 1 , 14.2.1.3 and 14.2.1.4)
If the control unit is made by BÖHNKE + PARTNER GmbH, preference is also given to the inspection control when the car or door cannot be moved any more, with the inspection control turned on and the emergency control switched in and vice versa.
Switching the inspection control deletes all existing calls and disables the push buttons for cabin calls, landing calls and superior control functions.
All safety circuit devices remain effective (DIN EN 81 part 1, 14.2.1.3).
Once the lift system is switched back to normal operation, you can make a call to trigger correction travel for the landing counter. Control units equipped with an absolute encoder do not require a correction travel.

8.9 Course of a Regulated Two Speed Travel (Summary)

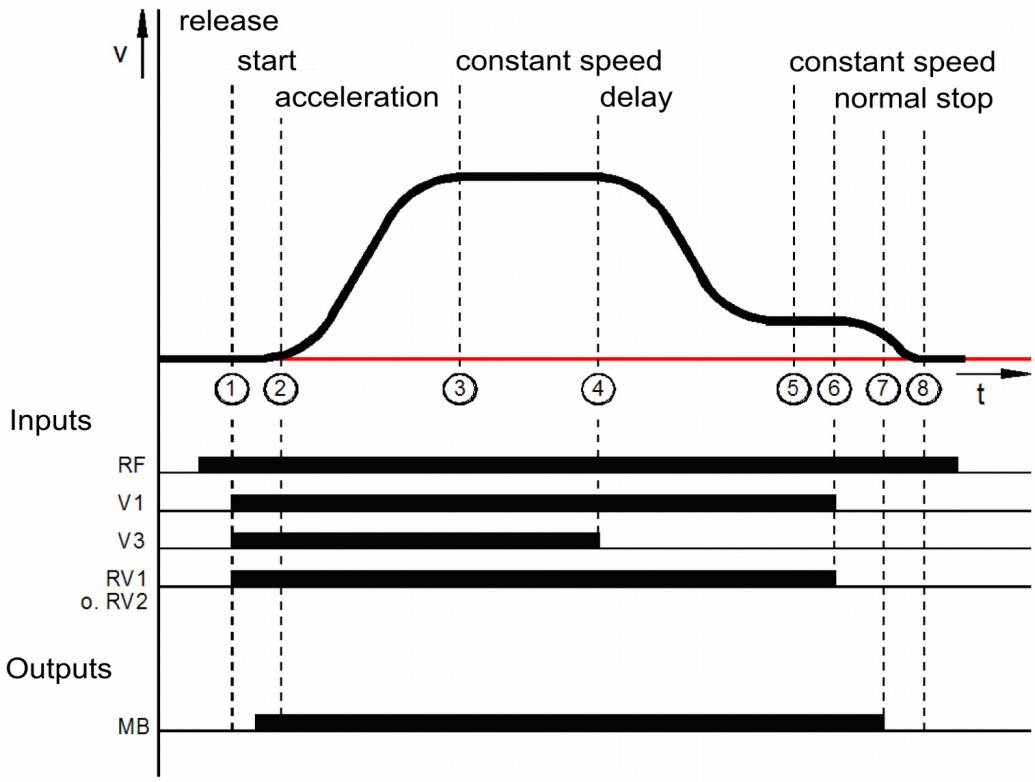


Fig. 58
RVM-01controls the inverter during normal travel.

After switching on the main contactor and releasing the inverter, the control unit selects the inverter by setting the direction of travel, speed V3 and the starting signal. The inverter keeps the motor at idling speed of n=0 revolutions per minute and sends signal MB to the control unit (1 to 2) via terminal 31, which opens the electromagnetic brake. After switching on the brake via relay K4 of the control unit, the motor accelerates until speed V3 is reached (2 to 3). A travel at constant speed follows (3 to 4) until speed V3=0 is cancelled. The motor slows down to positioning speed V1 (4 to 5). After a short distance, speed V1=0 is no longer selected (5 to 6), and the motor decelerates further (6 to 7). As soon as the motor stands still, the inverter closes the electro-magnetic brake MB (7 to 8). The main contactors are switched off with a time delay through the RF signal.

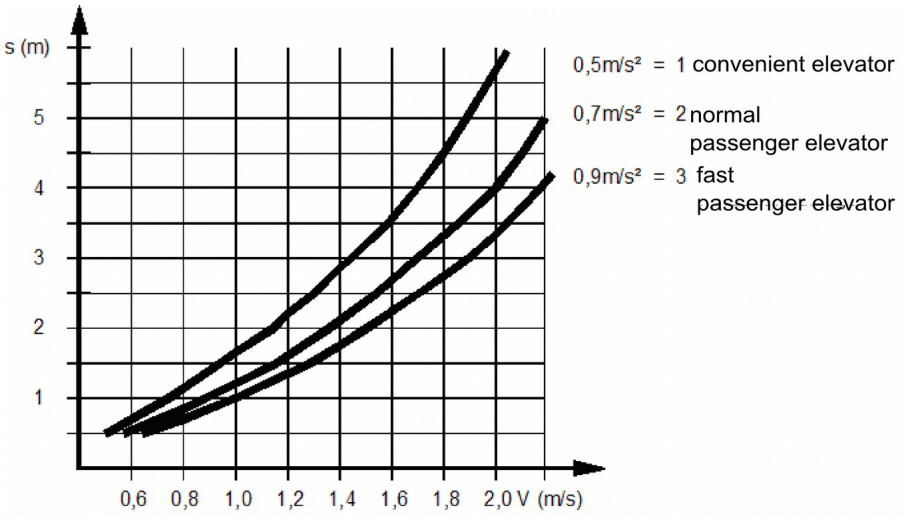
INFO!

- The electromagnetic blocking brake must be switched on and off without time delay through relay MB, in order to ensure that the inverter initiates smooth starts and stops.
- The main contactors to the motor must be switched on and off without time delay through relay RB to ensure smooth starts and stops .
- If the collective malfunction relay of the inverter becomes dislodged due to a malfunction, the control unit must ensure that the mechanical brake and main contactor to the motor are switched off immediately. The output of the collective malfunction relay of the inverter is connected to terminal 34 of the control unit.
- Together with the mains contactor of the inverter, the mains contactor of the control unit has to be opened or closed without time delay. This is the only way to monitor the brake chopper with regard to excess temperature and disconnect the inverter from the mains, if necessary.

8.9.1 Disconnection Points for the High Travelling Speed (V3)

The deceleration distance can be taken from the diagram. The values shown are only valid if the factory set rounding R_NEG1=60% and R_NEG2=90% are not changed. Moreover, it is assumed that the control unit gives the disconnection points to the inverter without delay.

The values shown are benchmark values only and should be adapted to your individual requirements on site.



V	brakedis.1	brakedis.2	brakedis.3
0,8	1,18	0,90	0,70
1,2	2,25	1,73	1,41
1,6	3,60	2,70	2,36
2,0	5,40	4,10	3,40

Fig. 59
Diagram and table of deceleration distance

RECOMMENDATION

The disconnection point should − if possible − be set to a value higher than the determined deceleration distance in order to create leeway for the optimisation of the speed curve behaviour. .

To achieve distances travelled at speed V0 that are as equal and short as possible, the disconnection points must be set with an accuracy of +/-1 cm.

The disconnection points for speed V2 must be set with an accuracy of +/-1 mm, depending on the setting of V0 before reaching the flush landing level.

8.10 Course of a Direct Travel with DCP (Summary)

With protocols DCP3, the control unit and the inverter serially exchange only signals that would travel via terminals in case of selection. The speed curve corresponds to a normal travel as described in the previous section.

At the protocols DCP4 or CANopen, the control unit cyclically transmits, besides some control signals, the remaining distance to the next landing to the inverter, thus enabling the inverter to calculate an ideal speed curve and make the car approach the landing directly.

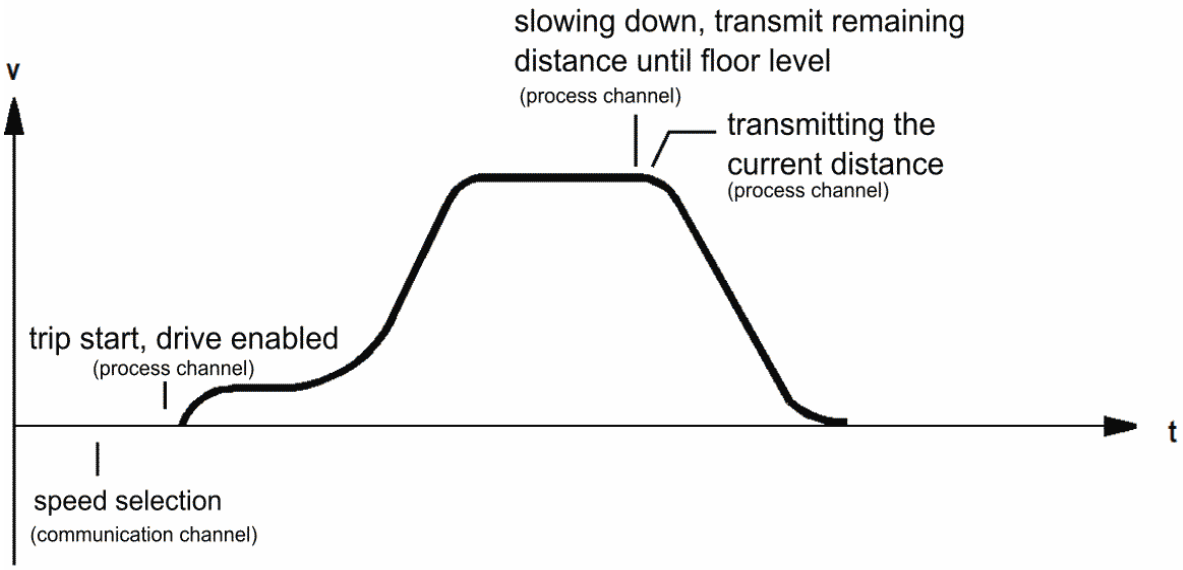


Fig. 60
Speed curve of a travel with direct landing approach

8.11 Commissioning of the Floor selector System

As soon as it possible to travel with inspection control, the transmitters of the Floor selector system can be mounted and installed. It can be either magnet switches, absolute rotary shaft encoders (AWG-05) or linear encoder systems such as USP or laser positioning systems.

8.11.1 Installation of the Deceleration Switches

ATTENTION!
For your personal safety, make sure that the inspection switch ON-OFF as well as the buttons UP-DOWN and EMERGENCY STOP have been wired into the safety circuit according to the circuit diagram.
To decelerate the first travels even when the absolute encoder has not yet been installed, first install the deceleration switches S81 and S82 for inspection and emergency control at the terminal landings putting them at their correct deceleration points in the well, and ascertain that they switch properly.

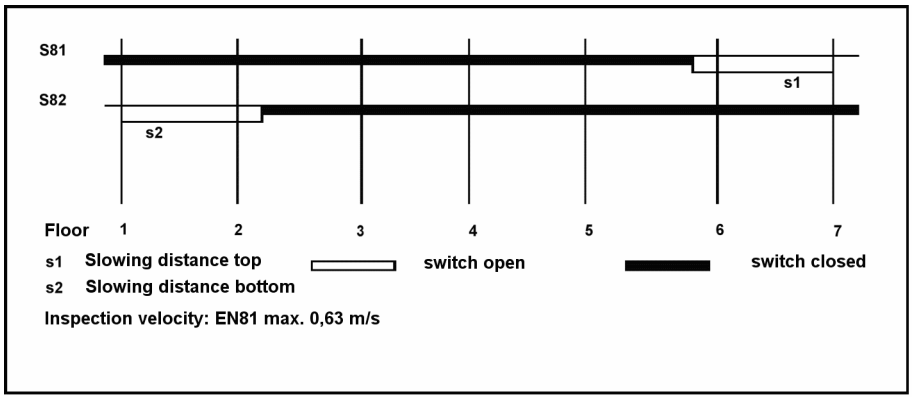


Fig. 61
Pulse diagram of the deceleration switches

Deceleration is initiated when the switches in the direction of travel open accordingly. Deceleration switch S81 opens and starts deceleration for the top landing. Deceleration switch S82 opens and starts deceleration for the bottom landing. The deceleration of inspection and emergency travels has to be carried out at these deceleration points as well. The flush-level position of the terminal landings must not be over-travelled.

Please set the following in the service menu:
> MAINTENANCE

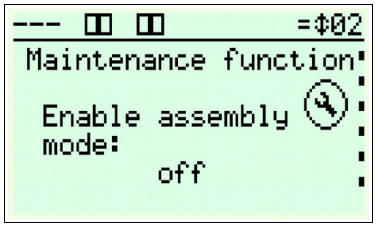


Fig. 62
Activating the assembly travel to move the car without encoder

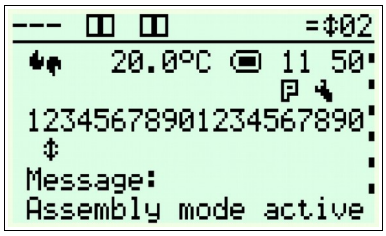


Fig. 63
Information on the activated assembly travel in the standard view.

> MAINTENANCE FUNCTIONS

Scroll through this sub-menu until you reach ENABLE ASSEMBLY MODE and select ON. Now scroll further to ASSEMBLY MODE WITH PRE-LIMIT SWITCHES (S81/S82) and select ON.
After that you can start travelling with inspection/emergency control in order to install the Floor selector system as described in section 6.6.

8.11.2 Basic Settings

After installing the CAN transmitter system (see installation manual enclosed), select the following presets in the bp308 setup menu:

Setup menu: > PARAMETER
> LIFT DATA
> FLOOR SELECTOR > ABSOLUTE ENCODER (CAN)

followed by: > PARAMETER
> FLOOR SELECTOR
> APS1 PARAMETER
TYPE
CODE SEQUENCE

Deceleration points and flush-level positions can comfortably be set via special setting menus.
In the service menu, the following basic settings have to be selected:

Service menu: > SETTINGS
> FUNCTIONS
> DRIVE UNIT
> TRAVELLING SPEED
> DECLARATION DISTANCE
> MINIMUM TRAVEL DISTANCES

Enter the nominal and intermediate speeds of the system.

Go to this menu : > SETTINGS
> SHAFT ENCODING
> PARAMETER
> GENERAL WAYS
SHAFT PIT
SHAFT HEAD
CAR HEIGHT

Enter an approximate depth of the shaft pit, i.e. the distance between the sill of the bottom landing and the floor of the shaft pit.
This value has been preset to 1 m at factory and is meant to obtain the most precise well representation possible.

8.11.3 Read-in Travel with Absolute Encoder

After completing all these settings, you can initiate the read-in travel in compliance with the following instructions. During the read-in travel, the flush-level positions of every landing are precisely determined and memorised in the program memory. From the data gathered by the read-in travel combined with the parameters set, the control program calculates the virtual floor selector.

INFO!
It is recommended that two persons carry out the read-in travel together. It is of utmost importance that the flush-level positions are approached and read-in with perfect precision as the control system calculates the landing parameters from the values read in.

Please proceed as follows:

1. Switch the lift to the INSPECTION operation mode.
2. Activate the ABSOLUTE ENCODING menu and then READ-IN TRAVEL (It is possible to leave the program by pressing the Call/End button at any time).
3. Move the lift to the bottom landing (landing 1) as near as possible to the flush-level position with the inspection button. For a rope traction lift, you reach this precise position by releasing the brakes and turning the hand wheel.
4. For a hydraulically operated lift, approach the precise flush-level position of the bottom landing by operating the emergency valve or the hand pump.
5. After positioning the lift flush with landing level 1, activate either the OK button of the LC display or the cabin call button of landing 1. Button 1 lights up to acknowledge the correct reading-in of the flush-level position.
6. Repeat this procedure for every other landing as well.
7. After reading in every flush-landing level position, you can switch the lift back to normal operation mode.

Move the lift to every landing from both directions and check whether the car stops at the flush-landing levels. To do this, use the level control under DIAGNOSTICS > SHAFT SIGNALS > LEVEL CONTROL. If the lift does not stop at the previously memorised position, you can adjust the DECELERATION DISTANCE V0 (STOPPING DISTANCE) under FUNCTIONS > DRIVE UNIT.

The range of the re-levelling area can be adjusted independently from the flush-level area. Refer also to the service menu TIMES > DRIVE UNIT / RELEVELLING DELAY TIME.

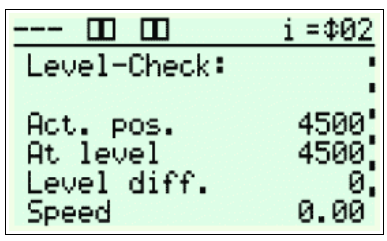


Fig. 64
Level check dialog

8.11.4 Travel Speeds

Travel speeds are set in the service menu under SETTINGS > FUNCTIONS → DRIVE UNIT. Abbreviations of different speed designations:

VN = Re-levelling speed
VI = Inspection speed
VR = Emergency speed

V0 = Levelling speed
V1..V7 Intermediate and fast speeds, depending on the selected drive type.

The braking and minimum distances can be re-calculated when changing the travel speed. These have to be adjusted, if necessary.

INFO!
V0 < V1 < V2 < V3 < V4 < V5 < V6 < V7!

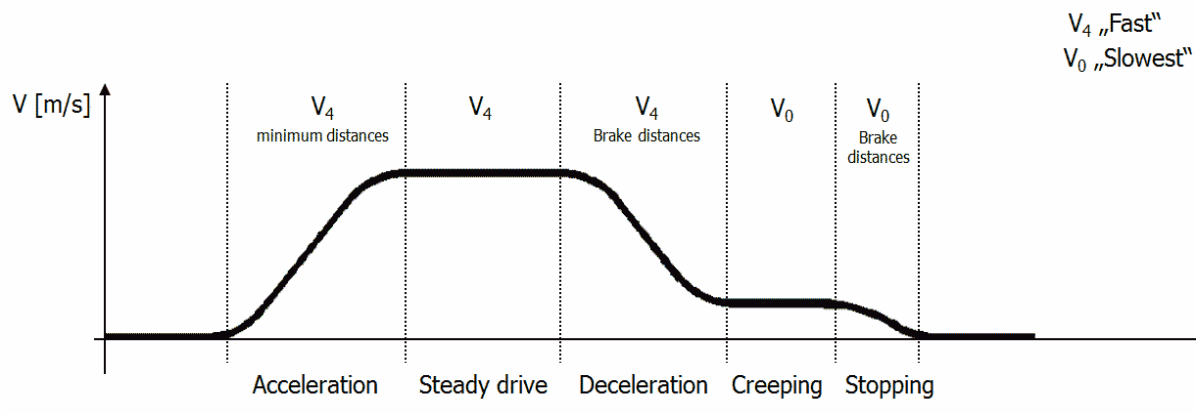


Fig. 65
Example of a speed curve when a DCP-03 connection with V4 nominal speed is selected.

INFO!
For speed controlled lifts, you have to adhere to the instructions of the frequency inverter manufacturer!

Deceleration distance V1..7 = Deceleration sets in toward the landing Deceleration distance VI = Deceleration sets in during Deceleration sets in during VR = Deceleration sets in with emergency control (if supported separately by the drive unit)

Deceleration distance V_0 (stopping distance) = Disconnection point

Re-levelling flush down = Re-levelling to flush landing level
Re-levelling flush up = Re-levelling to flush landing level

Landing area down = Level control when car stops
Landing area up = Level control when car stops

Zone area down = Switching threshold for door starting to open while car is slowing down to approach the landing
Zone area up = Switching threshold for door starting to open while car is slowing down to approach the landing

- shaft pit (limit down travel)
  Standard is set to 1 m. It can be adapted to the actual value in order to calibrate the well with effective values. It also defines the operating range of the transmitter.
- Shaft head (limit up travel)
  Standard is set to 1.5 m. It can be adapted to the actual value in order to calibrate the well with effective values. It also defines the operating range of the transmitter.
- Car position
  This value is required for travelling to the maintenance position. It should be selected so that the field engineer can easily access the car roof.

8.11.5 Deceleration through S81/S82 with Normal Operation at the Terminal Landings

Some operators request an additional safety device for the top and bottom landings. It ensures that the lift is switched to the levelling speed (V0) before reaching the terminal landing. This option is provided by operating the deceleration switches S81 and S82.

CAUTION!
It is essential for this application that the deceleration switches S81 and S82 are mounted at the proper deceleration points and function perfectly.

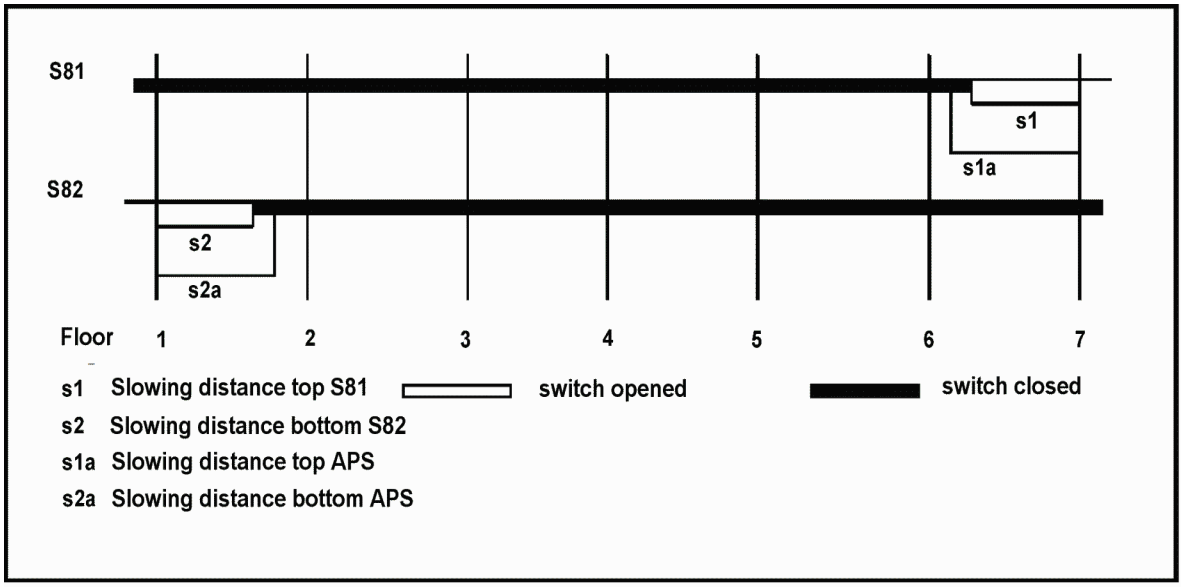
Deceleration of a travel at maximum speed must set on at these deceleration points and the flush-level position of the terminal landings must not be over-travelled.

Deceleration is initiated when the switches in the direction of travel open accordingly.

Deceleration switch S81 is related to upward travel and opens to switch the lift to low speed (V0) before reaching the top landing.

Deceleration switch S82 is related to downward travel and opens to switch the lift to low speed (V0) before reaching the bottom landing.

Settings in the setup menu: > FUNCTIONS
> FLOOR SELECTOR
> DECELERATION (S81/82)
ON



▲ Fig. 66
Pulse diagram with magnet switches and AWG-05

8.11.6 Impulse diagrams of Absolute Encoder, without Short Distance Landing

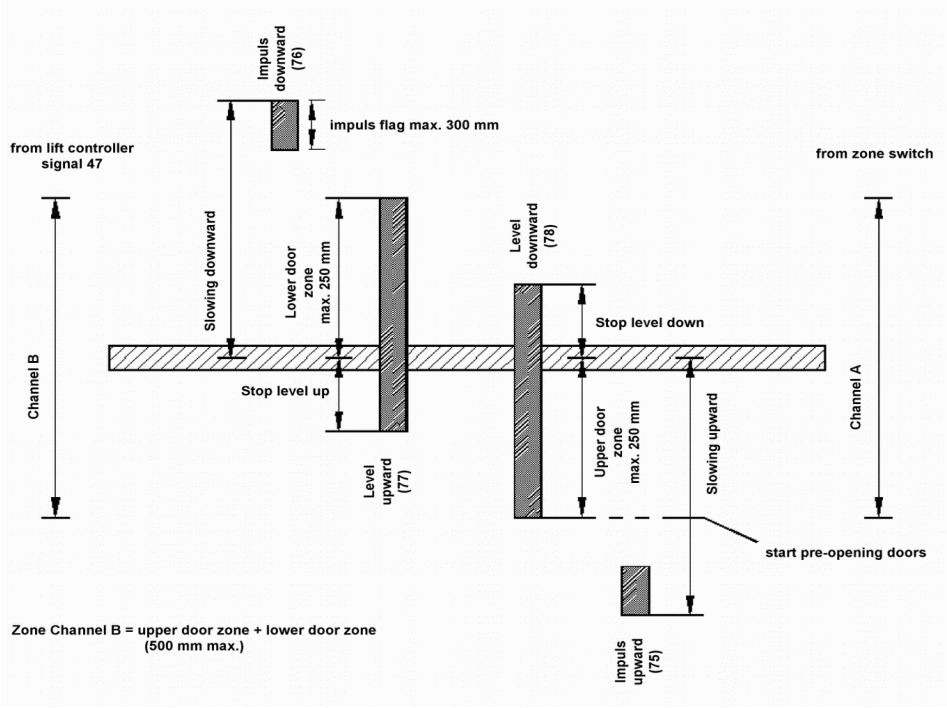

Impuls downward (76)
impuls flag max. 300 mm
from lift controller signal 47
from zone switch
Slowing downward
Lower door zone max. 250 mm
Level downward (78)
Stop level down
Channel B
Stop level up
Channel A
Level upward (77)
Upper door zone max. 250 mm
Slowing upward
start pre-opening doors
Zone Channel B = upper door zone + lower door zone (500 mm max.)
Impuls upward (75)

Fig. 67

Pulse diagram related to deceleration distances in the flush-level area

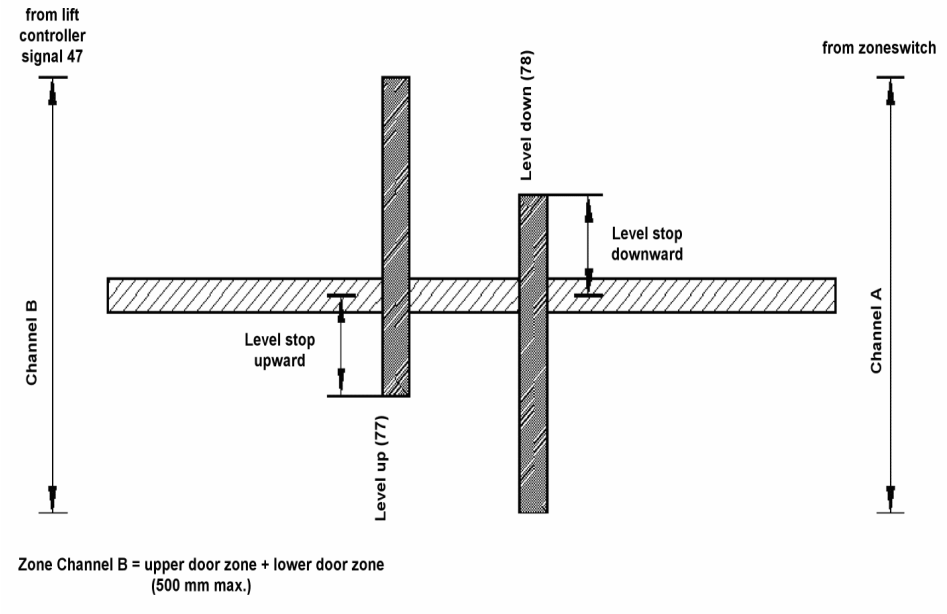

from lift controller signal 47
from zoneswitch
Level down (78)
Level stop downward
Channel B
Level stop upward
Channel A
Level up (77)
Zone Channel B = upper door zone + lower door zone (500 mm max.)

Fig. 68

Pulse diagram related to the zones in the flush-level area

8.11.7 Impulse diagrams of Absolute Encoder with Short Distance Landing

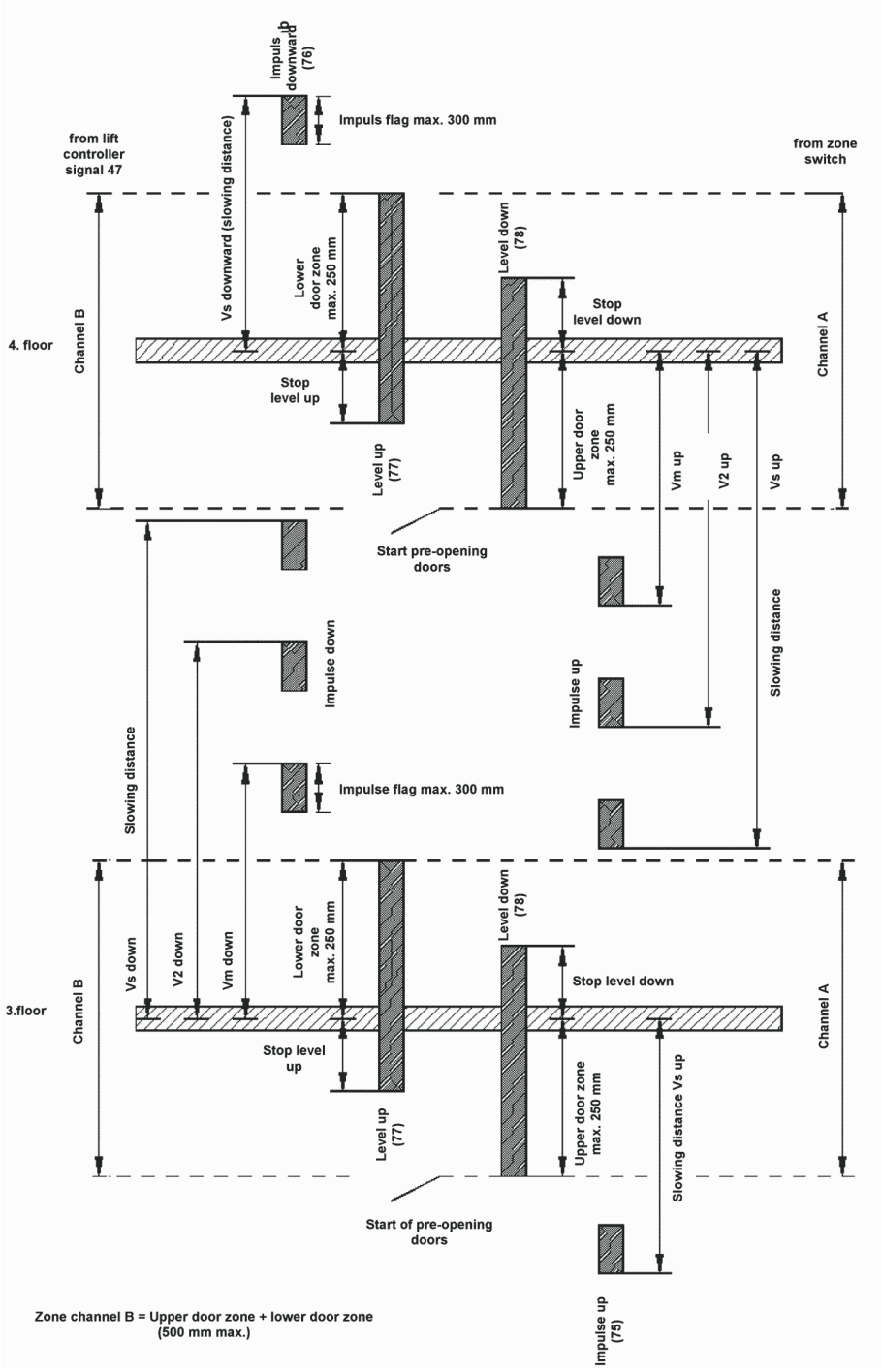


Fig. 69
Pulse diagram 3, deceleration distances and flush-level area

8.12 First Travel with Normal Operation Controls

CAUTION!

For your personal safety check every item.

Also follow the safety instructions in section 2 "Safety Information".

Have you followed every item of the previous check-lists (see section 8.4 and following)?	Yes □
Does the bp308 LC display fail to display current malfunctions ?	Yes □
Emergency control and inspection control are functioning as described in sections 8.7 and 8.8.	Yes □
Emergency limit switches have been mounted, commissioned and their functions checked.	Yes □
Safety switches have been mounted, commissioned and their functions checked.	Yes □
Touchdown buffers have been mounted and their functions checked	Yes □
Switching magnets in the well have been installed according to the pulse diagram.	
Switching magnets in the well have been installed according to the pulse diagram.	Yes □
Correction switches have been mounted and commissioned according to the deceleration distance and their functions checked.	Yes □
Read-in travel for absolute encoder AWG-05 has been executed as described (section 8.11.3)	Yes □
Read-in travel for drive unit has been executed as according to the manufacturer's instructions.	Yes
In case of a DCP connection to the inverter, the read-in travel has been executed following the DCP parameters according to the description (section 8.6.4)	Yes □
The deceleration onset points have been adjusted in order to enable correct deceleration down to standstill.	Yes
There is enough clearance between the door coupling blades mounted to the car door passing through the door coupling rollers mounted to the landing doors.	Yes □

If you have answered »Yes« to every question, you may continue.

Keep the doors closed, see maintenance menu.	□
Switch off landing controls.	□
Using the inspection or emergency control, move the car to the flush-landing level position of either the top or bottom landing.	□
After switching back to normal operation (inspection and emergency control off), the LCD displays the position of the top or bottom landing.	□
Start the lift from the machine room with the call button up or down in to check free travel through the well.	□
Check the incoming pulses from the landing selector in the DIAGNOSTICS → WELL SIGNALS.	□
Check the input and output signals in the menu DIAGNOSTICS → SIGNALS	□
After the first proper travel, check flush-level position, brake onset points and – for speed controlled lifts – the speed control parameters and optimise them, if necessary.	□
After that check the travel procedure by entering commands in the car operation panel. Do it as from every landing up and down.	□

Now activate the landing controls and check the travel procedure by entering landing calls at every landing up and down. □
Check landing signals, out-of-operation signals and direction indicator. □
Check photocell, closing force limiter, emergency alarm etc. □

Now continue by optimising the travelling behaviour.

8.13 Optimising the Travelling Behaviour

After successfully executing the first normal travel, continue optimising the travelling behaviour.

8.14 Commissioning the Emergency Call System

According to EN 81 28, every lift must have an emergency call system linked to a 24-hour service station. After wiring the emergency call unit as described in section 8.14 commission it according to the instructions enclosed and check its functions by making emergency test calls.

8.15 Commissioning the Emergency Call System

If you are commissioning a group of lifts, first ensure the correct function of each single lift and then link them in the group via the interconnection plugs. Check that the group parameters are adjusted correctly and switch the landing controls on to check whether landing calls come in parallel to every lift of the group.

Then switch the landing controls of all lifts off. Landing calls must not be accepted any more. Now, one after the other, switch the landing control on again for one lift at a time and check each one's landing control functions.

8.16 Commissioning the Data Remote Diagnostics

As described in section 8.16 data remote diagnostics can be carried out via different kinds of networks. If wiring has been completed according to the circuit diagrams supplied, you can establish the connection.

INFO!
To correctly commission our software WinMOS®300, please follow the specifications and instructions of the WinMOS®300 manual.

Be aware that you may unwittingly shut-down the lift by entering incorrect parameters (e.g. setting runtime monitor value too low).

If you want to connect a modem parallel with an emergency call system to a mutual telephone connection, first ask approval from BÖHNKE + PARTNER.

Although WinMOS®300 offers options for the lift attendant function, this will not relieve users from their duty to make sure on site, that the safety devices of every lift are not purposefully disabled or destroyed (e.g. emergency stop and emergency call).

Software updates for the control unit or for functions of components that are essential for the lift functions may only be carried out if they are checked by qualified personnel on site.

8.16.1 Commissioning of a Modem

If an analogue modem is used for data remote diagnostics and it has to correspond to the V.250 standard, the communication parameters can be entered after having completed the wiring. This primarily includes the interface (internal modem or data communication port), RDT300 (DFÜ300) protocol, and telephone number to be called in case of malfunctions or emergency. You should also set when feedback should be given to the service centre: in case of every malfunction, shutdown only, or none.

8.16.2 Commissioning of a Network Access

If data remote diagnostics is to be carried out via a network access, you have to set the following parameters :

- IP-address: z. B. 192.168.0.119
- Subnet-mask: z. B. 255.255.255.0
- Gateway: e.g. 192.168.0.2
- Port: e.g. 8000 (pre-configuration)

INFO!
IP-address, Subnet-mask and the gateway are provided to you by the network administrator. Ports 8000 and 9000 must be available in the network. The TCP/IP protocol is used .

For more instructions concerning data remote diagnostics, please refer to the current WinMOS®300 manual.

8.17 Completing the Commissioning

It is recommended to file a hardcopy of the current parameter set in the technical system documentation once commissioning has been completed. Use WinMOS®300 to read the system parameters and file the hardcopy in the technical documentation. If you do not have access to WinMOS®300, write down the parameters in the hardcopy of the setup menu and service menu, which is enclosed.

Error messages stored in the batch memory and malfunction list during commissioning as well as the messages in the maintenance batch memory can be deleted.

If third parties (e.g. janitor) have access to the system, please protect access to the menus by assigning a setup and a service code.

9 Troubleshooting

Thanks to the digital structure of the control systems, a large number of possible reasons for malfunctions can be displayed concisely. Normally the reason can be found with the help of these messages/malfunctions in the event log or malfunction list. If the lift has been shut down due to a malfunction, the background of the LC display flashes and the abbreviation »BLK« (blocked) is displayed. To find out the exact reason of the malfunction, please refer to the event log or the malfunction list. After eliminating the reason for the malfunction, remove the block by pressing the Call/End button and answer the information with the OK button or by quickly switching off the operational voltage.

Fig. 70
An err log item in the malfunction stack, that blocked the lift.

9.1 Monitoring Routines

The bp308 software monitors a lot of signals for correct behaviour and time characteristics. If any discrepancy arises, a corresponding error message is stored in the event log and time stamped. You can read how often this error occurred from the malfunction list.

If a control time or monitoring time (e.g. start monitoring, runtime monitoring, deceleration monitoring) is exceeded, the lift is stopped and all travel commands cancelled. If any warning devices respond, the lift is shut down at the next landing ahead and blocked. Warning devices are, for example, motor overload switch, pressure switch and over-temperature switch of the hydraulic system.

If the safety circuit responds, the travel is interrupted and all travel commands deleted.

The door lock monitoring, if responding, also results in the travel commands being deleted. The door lock monitoring responds after three attempts.

The flush-level position of the car is monitored through the absolute encoder or flush-level switches. If the motionless car leaves the flush-level position, it is re-levelled, if necessary with open doors thanks to the safety circuitry SMZ-04 that correspondingly bypasses the door and locking contacts.

- PTC thermistor
  Terminals PTC/PTC, it is possible to monitor any common positive temperature thermistor.
- Overload terminal 20
  Terminals 100/20. Maximum output current 2,2 A.
- Excess voltage in the system
  Terminals 100/20/PE. For connections refer to STM-02

- Runtime monitoring
  Monitors starting, high speed travel and low speed travel phases. Refer to the »monitoring times« menu.
- Contactor release (33)
  Release of the drive contactor is checked prior to starting.
- Brake release (35)
  Release of the brake jaws is checked by contacts prior to starting.
- Door and lock check
  Monitors closing of the safety circuit prior to start. Refer to the »monitoring times« menu.
- Safety circuit
  Monitors input and output signal of the integrated SMZ-04 (zone).
- Speed controls / LRV (34)
  Monitors the malfunction output of the frequency inverter.
- Brake release / activation (31)
  Monitors the »mechanical brake« output of the frequency inverter.
- Pulses/flush-level position/correction (71-78)
  Monitors plausibility of the well signals if no absolute encoder is used.
- Re-levelling (w/o absolute encoder, 73-74 / 77-78)
  Monitors 20 times and 20 seconds per travel direction and per landing.
- Safety circuit (terminals X5: 9, 15, 16, 17-18, 19)
  Monitors standstill and travels.
- Correction signal/absolute encoder (71-72, CANopen)
  Monitors plausibility of the well signals.
- Block
  Some monitoring functions may have been parametrized using the blocking option (lift will get blocked if fault message is thrown).

TIP ABOUT MONITORING FUNCTIONS !
Monitoring functions are directly displayed in the DIAGNOSTICS → MALFUNCTIONS menu. They are registered and stored in the event log and the malfunction list.

9.2 Malfunction Information

Malfunctions impact the lift control functions so that proper operation is no longer possible. All current events that have resulted in a malfunction of the lift are displayed, e.g. :

- Speed governor has responded
- PTC thermistor of drive motor and/or hydraulic unit has responded,
- Start time check, travel check, deceleration check,
- Brake monitoring, contactor monitoring,
- Malfunction of the floor selector,
- Malfunction of the frequency inverter ,
- Door open/close control,
- Safety circuitry .

If a malfunction occurs it is registered in the event log and the malfunction list. Provided that the system is connected to a WinMOS®300 Remote Diagnostics System, a callback can be initiated if a malfunction has occurred. A critical fault can result in a shut-down of the system. After eliminating the fault, you can unblock the system again. Remove the block by pressing the Call/End button and answer the information with the OK button or by quickly switching off the operational voltage.

Serious malfunctions cannot be reset by switching off the operational voltage.

Smaller malfunctions, such as for example door locking faults, can be reset by entering a new call.

9.3 Reporting of Malfunctions

Every bp308 has been prepared for remote diagnostics. The control system bp308 is fitted with a LAN connection for attaching the control unit to an Intranet or the Internet. If the unit is to be connected via the telephone, an analogue modem can be connected to the USB-A interface.

LONmark standard-compliant gateways, OCP severs and a Profibus gateway are available for connection to the building automation system .

Provided that the malfunction reports callback function has been activated in the setup menu, a malfunction will be reported to the service centre by stating the kind of malfunction, date and time.

For more information concerning remote diagnostics refer to the WinMOS®300 manual or go to www.WinMOS.de.

9.4 Malfunction Stack

Fig. 71
Entry in the malfunction stack.

The malfunction stack stores the last 128 malfunctions with time stamp, in chronological order. A display routine enables you to display the error messages in plain text on the LC display, stating:

- Date,
- Time,
- Malfunction,
- And the landing and recorded landing name in the case of landing-related malfunctions.

You can open a malfunction entry with the »Right« button. This shows you the position, speed and a selection of important signals that occurred at the time of the event. This enables you to reconstruct the history of the latest malfunctions.

Press »OK« to delete the stack and also answer the security question by pressing »OK«. In order to create a stringent protocol, we recommend deleting the event log only after having transmitted the entries to the WinMOS®300 centre.

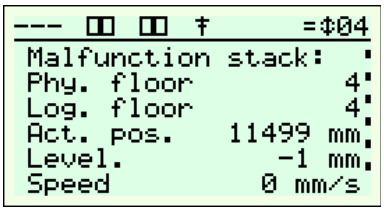


Fig. 72
Additionally details of an error log item.

9.5 Malfunction List

The malfunction list stores the frequency of occurrence of all malfunctions registered, stating:

- Malfunction,
- Frequency,
- Landing, if the malfunction is related to it.

A display routine enables you to display the error messages in plain text on the LC display.

Press »OK« to delete the stack and also answer the security question by pressing »OK«. In order to create a stringent protocol, we recommend deleting the event log only after having transmitted the entries to the WinMOS®300 centre.

9.6 Messages

Messages inform you about special conditions within the system and that the lift might have restricted functionality. All data resulting in the message at that point is reported.

Examples:

- Landing controls switched off
- Emergency stop activated in the car
- Inspection controls switched on
- Emergency controls switched on
- Cabin priority functions switched on
- Priority calls are waiting
- Full load or overload contact has responded
- Fire/fire brigade controls are switched on
- Emergency power supply activated
- Car travelling to parking landing
- lift removed from group
- Car at parking landing

9.7 Repair Work

If a malfunction becomes apparent in the control electronics, it is recommended not to repair it on site, as this would not be economical.
To save time and money, please call us and state the serial number of the control unit and the circuit diagrams.

10 Maintenance

Prior to carrying out maintenance work, we recommend reporting it in the bp308 service menu under MAINTENANCE > MAINTENANCE FUNCTIONS > MAINTENANCE ON. From that point, the system no longer sends error messages via remote data transfer and the system is displayed as "undergoing maintenance“.

As part of the standard maintenance routine, check the following with the control system bp308:

- General visual check for possible dust, moisture or corrosion. If necessary, remove any deposits.
- Are all connections to the control unit properly secured?
- Do batch memory and/or malfunction list display any malfunction? Check the malfunctions registered and delete them, if necessary.
- Check both messages and message stack (recorded messages) for irregularities.
- Make sure that the accumulator of the emergency illumination is capable of illuminating the car for 1 hour.
- If using uninterruptable power supplies (UPS), pay attention to the maintenance instructions in the corresponding manuals.
- Under normal conditions, the toothed belt of your absolute encoder system is maintenance-free. In case of heavy use, or if the toothed belt produces noises, it is recommended to treat its running surface with the talcum powder supplied or with silicone spray.

Fig. 73
The control system bp308 is easy to maintain. It can automatically inform you if maintenance is required.

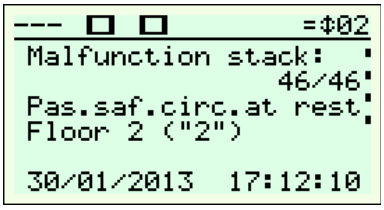


Fig. 74
Entry in the malfunction stack

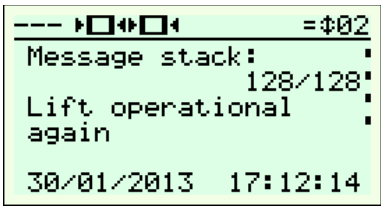
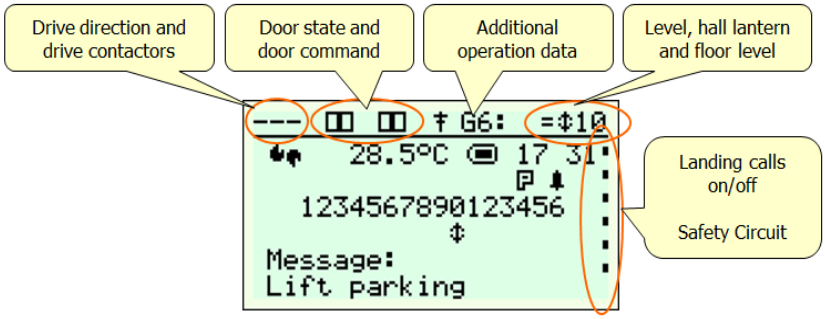


Fig. 75
Entry in the message stack

Appendix
A Menu Navigation bp308
Version 88D2312 (29/08/2013)

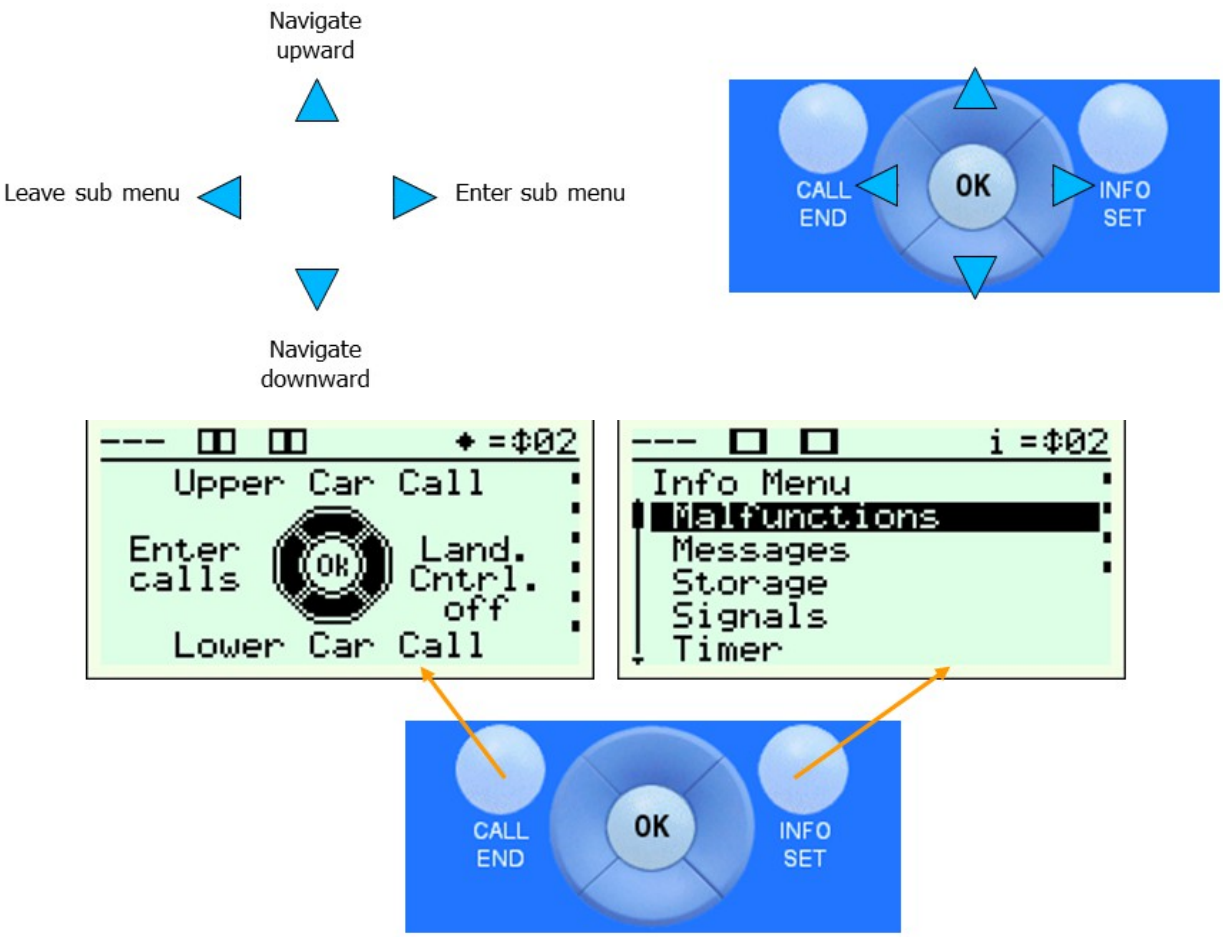
- New graphical display of the bp308.

  - The safety circuit is now visible at all menus and dialog views.
  - The current door state, the door command, the floor level, the drive state and the hall lantern can be monitored at the status line at all time.



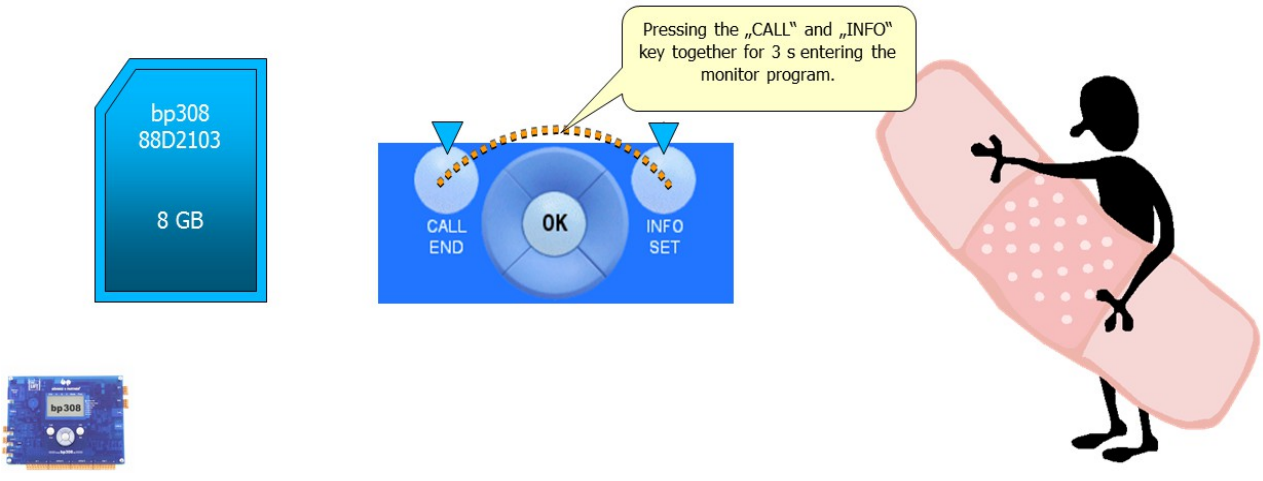
- New keyboard of the bp308.

  - Cursor keys for menu navigation.
  - „Cursor right"-key to navigate forward (entering a sub menu).
  - „Cursor left"-key to navigate backward (leaving a sub menu).



- Updating the firmware using SD-card or USB-mass storage.

- For entering the monitor program to backup or update the lift application, hold the „CALL" and „INFO" key pressed for three seconds.



B Service Menu Quick Reference

Program Version: 88D2402B (14/02/2014)

```
Service Menu
============
+- Diagnostics
|     |
|     +- Malfunctions
|     |
|     +- Messages
|     |
|     +- Storage
|     |     |
|     |     +- Malfunction stack
|     |     |
|     |     +- Message stack
|     |     |
|     |     +- Maintenance stack
|     |     |
|     |     +- Malfunction list
|     |
|     +- Signals
|     |     |
|     |     +- Shaft-Signals
|     |     |
|     |     +- Port I/O
|     |     |
|     |     +- Calls
|     |     |
|     |     +- Controller
|     |     |     |
|     |     |     +- Ins/Ero inputs
|     |     |     |
|     |     |     +- Evacuation inputs
|     |     |     |
|     |     |     +- Evacuation outputs
|     |     |     |
|     |     |     +- Display Outputs
|     |     |     |
|     |     |     +- Misc inputs 1
|     |     |     |
|     |     |     +- Misc inputs 2
|     |     |     |
|     |     |     +- Misc inputs 3
|     |     |     |
|     |     |     +- Misc outputs 1
|     |     |     |
|     |     |     +- Misc outputs 2
|     |     |     |
|     |     |     +- Misc outputs 3
|     |     |     |
|     |     |     +- Docking op. inputs
|     |     |     |
|     |     |     +- Docking op.outputs
|     |     |     |
|     |     |     +- Auto lift inputs
|     |     |     |
|     |     |     +- Auto lift outputs
|     |     |     |
|     |     |     +- Misc outputs 4
|     |     |
|     |     +- Floor selector
|     |     |     |
|     |     |     +- Floor sel. inputs
|     |     |     |
|     |     |     +- Floor sel. outputs
|     |     |
|     |     +- Drive unit
|     |     |
|     |     +- Doors
|     |     |     |
|     |     |     +- Hall door monitoring using separate door contacts
|     |     |     |   * Hall doors 1..127
|     |     |     |
|     |     |     +- Door A inputs
|     |     |     |
|     |     |     +- Door A outputs
```

```
|    |    |    |
|    |    |    +- Door B inputs
|    |    |    |
|    |    |    +- Door B outputs
|    |    |    |
|    |    |    +- Door C inputs
|    |    |    |
|    |    |    +- Door C outputs
|    |    |
|    |    +- Load measuring
|    |    |
|    |    +- UPS
|    |    |
|    |    +- Energy meter
|    |    |
|    |    +- Card reader
|    |
|    +- Group
|    |
|    +- Timer
|    |    |
|    |    +- Door A Timer
|    |    |
|    |    +- Door B Timer
|    |    |
|    |    +- Door C Timer
|    |
|    +- State
|    |
|    +- Interfaces
|    |    |
|    |    +- CAN 1 port
|    |    |
|    |    +- CAN 2 port
|    |    |
|    |    +- Network connection
|    |    |
|    |    +- SAP
|    |    |
|    |    +- SLP
|    |    |
|    |    +- AWG-05 (RS-485)
|    |    |
|    |    +- USV (Effekta)
|    |    |
|    |    +- USB-A (host)
|    |    |
|    |    +- Serial interface 1
|    |    |
|    |    +- Serial interface 2
|    |    |
|    |    +- Serial interface 3
|    |
|    +- Node List
|    |    |
|    |    +- Node CAN 1
|    |    |
|    |    +- Node CAN 2
|    |
|    +- Checksums
|
+- Settings
|    |
|    +- Functions
|    |    |
|    |    +- User Interface
|    |    |   * Language
|    |    |      - English
|    |    |      - Deutsch [Default]
|    |    |      - Nederlands
|    |    |      - Français
|    |    |      - Italiana
|    |    |      - Svenska
|    |    |      - Polski
|    |    |      - Russian
|    |    |      - Türkçe
|    |    |      - Magyar
|    |    |   * Secondary Language
|    |    |      - English [Default]
|    |    |      - Deutsch
```

```
|     |     |      - Nederlands
|     |     |      - Français
|     |     |      - Italiana
|     |     |      - Svenska
|     |     |      - Polski
|     |     |      - Russian
|     |     |      - Türkçe
|     |     |      - Magyar
|     |     |   * Startup Dialog
|     |     |      - Current malfunction or message [Default]
|     |     |      - Trip counter and hour meter
|     |     |   * Auto adjust. daylight-saving time
|     |     |      - off
|     |     |      - on [Default]
|     |     |
|     |     +- Controller
|     |     |    |
|     |     |    +- General
|     |     |    |   * Door gong
|     |     |    |      - off
|     |     |    |      - on hall calls [Default]
|     |     |    |      - on car and hall calls
|     |     |    |      - on car calls
|     |     |    |   * Car fan mode
|     |     |    |      - automatic and manual [Default]
|     |     |    |      - manually only
|     |     |    |   * Car light out of zone
|     |     |    |      - as on idle
|     |     |    |      - always on [Default]
|     |     |    |   * Car light on faults
|     |     |    |      - always on [Default]
|     |     |    |      - as on idle
|     |     |    |   * Car light on lift remote off
|     |     |    |      - on idle [Default]
|     |     |    |      - immediately off
|     |     |    |   * Car light reduction
|     |     |    |      - off [Default]
|     |     |    |      - on
|     |     |    |   * Car light on brightness
|     |     |    |      10..100 [100] %
|     |     |    |   * Car light off brightness
|     |     |    |      off/1..100 [20] %
|     |     |    |   * Emergency stop cancels calls
|     |     |    |      - off [Default]
|     |     |    |      - on
|     |     |    |   * After em.stop/SLC enable hall calls by car call or manual door
|     |     |    |      - off [Default]
|     |     |    |      - on
|     |     |    |   * Use "no load" signal for making the Occupied-signal
|     |     |    |      - off [Default]
|     |     |    |      - on
|     |     |    |   * Car calls on chemical operation
|     |     |    |      - cancel [Default]
|     |     |    |      - process all car calls
|     |     |    |   * Landing call on floor closes open/opening car door
|     |     |    |      - off [Default]
|     |     |    |      - on
|     |     |    |   * Calls when activating the cleaning operation
|     |     |    |      - cancel [Default]
|     |     |    |      - process all car calls
|     |     |    |      - process car calls, until cleaning floor
|     |     |    |   * On lift allocation, ignore door and motion detector
|     |     |    |      - off [Default]
|     |     |    |      - on
|     |     |    |   * Ignore extra calls on Blue Modus
|     |     |    |      - off [Default]
|     |     |    |      - on
|     |     |    |   * Ignore safety light curtain on Blue Modus
|     |     |    |      - off [Default]
|     |     |    |      - Blue Modus C (Standby)
|     |     |    |      - Blue Modus B (Shut Down)
|     |     |    |   * Call acknowledges
|     |     |    |      - cancel on stopping [Default]
|     |     |    |      - cancel after door opening
|     |     |    |      - cancel when door opening
|     |     |    |   * Temporary enabled calls use blinking acknowledge
|     |     |    |      - off [Default]
|     |     |    |      - on
|     |     |    |   * Disable temporary enabled calls by entering a call
|     |     |    |      - on
```

```
|    |    |    |      - off [Default]
|    |    |    |   * Hall lantern
|    |    |    |      - turn on at slowing point [Default]
|    |    |    |      - turn on when doors are unlocked
|    |    |    |      - turn on when doors open
|    |    |    |      - turn on when doors are fully open
|    |    |    |   * Hall lantern blinking on priority
|    |    |    |      - off
|    |    |    |      - on [Default]
|    |    |    |   * Hall lantern blinking on guest call
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Arrival indication off (463/scheduler) affects speech synth.
|    |    |    |      - on [Default]
|    |    |    |      - off
|    |    |    |   * Direction of control floor
|    |    |    |      - up and down [Default]
|    |    |    |      - up only
|    |    |    |      - down only
|    |    |    |   * Drive to control floor with load only
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Cancel car calls on control floor
|    |    |    |      - off [Default]
|    |    |    |      - all
|    |    |    |      - above
|    |    |    |      - below
|    |    |    |   * Use body detector for "no load" monitoring too
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Misboarder monitoring
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Automatic alternative routing
|    |    |    |      - off
|    |    |    |      - on [Default]
|    |    |    |
|    |    |    +- Car calls
|    |    |    |   * Max. number of car calls on "no load"
|    |    |    |      off/1..127 [off]
|    |    |    |   * Clear car calls on max. number calls on "no load"
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Clear car calls if door detector is not being triggered n-times
|    |    |    |      off/1..50 [off]
|    |    |    |   * Car call cancels load time
|    |    |    |      - on [Default]
|    |    |    |      - off
|    |    |    |   * Car call cancels hold time
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Pending car calls on landing calls off
|    |    |    |      - cancel [Default]
|    |    |    |      - complete
|    |    |    |   * Overload cancels car calls
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Clear car calls if landing door is opened
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Accept handicapped car calls only, after a handicapped landing call
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Signal if a disabled car call was selected
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Prevent disabling of low priority car calls
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * PB/APB Collect car calls
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |   * Car call canceling by repressing call button
|    |    |    |      - off [Default]
|    |    |    |      - on
|    |    |    |
|    |    |    +- Landing calls
|    |    |    |   * Signal if a disabled hall car was selected
|    |    |    |      - off [Default]
|    |    |    |      - on
```

```
|    |    |    |    |   * Prevent disabling extra landing calls
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |   * Process next extra landing call, if car not occupied
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |   * Landing call at remote off floor opens door
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |   * Landing calls on loadtime operation
|    |    |    |    |      - collective [Default]
|    |    |    |    |      - cancel
|    |    |    |    |   * Landing calls on lift allocation
|    |    |    |    |      - collective [Default]
|    |    |    |    |      - cancel
|    |    |    |    |
|    |    |    |    +- VIP service
|    |    |    |    |   * Landing calls handling on car priority
|    |    |    |    |      - collective [Default]
|    |    |    |    |      - cancel
|    |    |    |    |   * Car calls on car preference/VIP signal (84)
|    |    |    |    |      - one alterable car call [Default]
|    |    |    |    |      - collect car calls
|    |    |    |    |   * Hold car calls pressed on car prio. until doors close
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |   * Car preference activates signal Priority (60)
|    |    |    |    |      - on [Default]
|    |    |    |    |      - off
|    |    |    |    |   * Car preference activates signal Priority car (64)
|    |    |    |    |      - on [Default]
|    |    |    |    |      - off
|    |    |    |    |   * Low priority car call activates car preferences (VIP) (84)
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |   * Lift allocation cancels car allocation
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |
|    |    |    |    +- Priority calls
|    |    |    |    |   * Unlock car calls for low prio. call
|    |    |    |    |      - off [Default]
|    |    |    |    |      - automatic
|    |    |    |    |   * Car calls during priority
|    |    |    |    |      - cancel [Default]
|    |    |    |    |      - process all car calls
|    |    |    |    |      - process car calls, until prio. floor
|    |    |    |    |   * Allow entering of new car calls during priority
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |   * Landing calls during priority
|    |    |    |    |      - cancel
|    |    |    |    |      - collective [Default]
|    |    |    |    |   * Car calls on low priority operation
|    |    |    |    |      - one alterable car call [Default]
|    |    |    |    |      - collect car calls
|    |    |    |    |   * Trip to priority floor with no load only
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |   * Collect priority calls
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |   * Prevent disabling of low priority landing calls
|    |    |    |    |      - off [Default]
|    |    |    |    |      - on
|    |    |    |    |
|    |    |    |    +- High priority calls
|    |    |    |        * Unlock car calls for high prio. call
|    |    |    |           - off [Default]
|    |    |    |           - automatic
|    |    |    |        * Car calls during high priority
|    |    |    |           - cancel [Default]
|    |    |    |           - process all car calls
|    |    |    |           - process car calls, until prio. floor
|    |    |    |        * Allow entering new car calls during high priority
|    |    |    |           - off [Default]
|    |    |    |           - on
|    |    |    |        * Landing calls during high prio.
|    |    |    |           - cancel
|    |    |    |           - collective [Default]
```

```
|     |     |        * Car calls on high priority operation
|     |     |           - one alterable car call [Default]
|     |     |           - collect car calls
|     |     |        * Trip to high priority floor with no load only
|     |     |           - off [Default]
|     |     |           - on
|     |     |        * Collect high priority calls
|     |     |           - off [Default]
|     |     |           - on
|     |     |        * Prevent disabling of high priority landing calls
|     |     |           - off [Default]
|     |     |           - on
|     |     |
|     |     +- Group
|     |     |   * Park mode
|     |     |      - Fixed [Default]
|     |     |      - Zoning
|     |     |      - Lobby
|     |     |   * Number of lobby cars parked
|     |     |      none/1..8 [0]
|     |     |   * Door opening on hall call
|     |     |      - Open one car per floor only
|     |     |      - Open one car per landing call [Default]
|     |     |      - Open all cars on the floor
|     |     |   * Multiple priority calls per floor
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Penalty for car at lobby floor
|     |     |      off/1..5 [1]
|     |     |   * Penalty for lift parked
|     |     |      off/1..5 [1]
|     |     |   * Penalty for Blue Modus C
|     |     |      1..15 [8]
|     |     |   * Penalty for Blue Modus B
|     |     |      1..31 [16]
|     |     |   * Penalty for idle lift
|     |     |      off/1..5 [3]
|     |     |   * Penalty for car call stopping
|     |     |      1..16 [8]
|     |     |   * Distance to floor factor
|     |     |      1..4 [1]
|     |     |   * Penalty for directional change
|     |     |      off/1..4 [2]
|     |     |   * Send group settings to all active group members
|     |     |      - off [Default]
|     |     |      - Execute
|     |     |
|     |     +- Drive unit
|     |     |    |
|     |     |    +- Travelling speed
|     |     |    |   * V0 (Creeping velocity)
|     |     |    |      0..16000 [50] mm/s
|     |     |    |   * V1
|     |     |    |      0..16000 [0] mm/s
|     |     |    |   * V2
|     |     |    |      0..16000 [0] mm/s
|     |     |    |   * V3
|     |     |    |      0..16000 [0] mm/s
|     |     |    |   * V4
|     |     |    |      0..16000 [0] mm/s
|     |     |    |   * V5
|     |     |    |      0..16000 [0] mm/s
|     |     |    |   * V6
|     |     |    |      0..16000 [0] mm/s
|     |     |    |   * V7
|     |     |    |      0..16000 [0] mm/s
|     |     |    |   * VN (Releveling velocity)
|     |     |    |      0..300 [10] mm/s
|     |     |    |   * VI (Inspection velocity)
|     |     |    |      0..630 [500] mm/s
|     |     |    |   * VR (Emerg. rescue velocity)
|     |     |    |      0..630 [500] mm/s
|     |     |    |   * Max. full load velocity
|     |     |    |      - V0 (Creeping velocity)
|     |     |    |      - V1
|     |     |    |
|     |     |    +- Slowing distance
|     |     |    |   * V0 (stopping dist.)
|     |     |    |      0..65000 [35] mm
|     |     |    |   * V1
```

```
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V2
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V3
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V4
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V5
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V6
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V7
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * VN (Releveling velocity)
|     |     |     |     |      0..65000 [5] mm
|     |     |     |     |   * VI (Inspection velocity)
|     |     |     |     |      0..65000 [750] mm
|     |     |     |     |   * VR (Emerg. rescue velocity)
|     |     |     |     |      0..65000 [750] mm
|     |     |     |     |   * Additional slowing distance on start
|     |     |     |     |      - 50 %
|     |     |     |     |      - 25 % [Default]
|     |     |     |     |      - 12.5 %
|     |     |     |     |      - 6.25 %
|     |     |     |     |   * Additional braking distance while driving
|     |     |     |     |      - 50 %
|     |     |     |     |      - 25 %
|     |     |     |     |      - 12.5 % [Default]
|     |     |     |     |      - 6.25 %
|     |     |     |     |
|     |     |     |     +- Slowing distance
|     |     |     |     |   * V0 up (stopping dist.)
|     |     |     |     |      0..65000 [35] mm
|     |     |     |     |   * V0 down (stopping dist.)
|     |     |     |     |      0..65000 [35] mm
|     |     |     |     |   * V1 up
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V1 down
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V2 up
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V2 down
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V3 up
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V3 down
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V4 up
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V4 down
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * VN up (Releveling vel.)
|     |     |     |     |      0..65000 [5] mm
|     |     |     |     |   * VN down (Releveling vel.)
|     |     |     |     |      0..65000 [5] mm
|     |     |     |     |   * VI up (Inspection velocity)
|     |     |     |     |      0..65000 [750] mm
|     |     |     |     |   * VI down (Inspection velocity)
|     |     |     |     |      0..65000 [750] mm
|     |     |     |     |
|     |     |     |     +- Minimum drive dist.
|     |     |     |     |   * V0 (Creeping velocity)
|     |     |     |     |      0..65000 [15] mm
|     |     |     |     |   * V1
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V2
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V3
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V4
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V5
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V6
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * V7
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * VN (Releveling velocity)
|     |     |     |     |      0..65000 [0] mm
|     |     |     |     |   * VI (Inspection velocity)
```

```
|    |    |    |      0..65000 [0] mm
|    |    |    |   * VR (Emerg. rescue velocity)
|    |    |    |      0..65000 [0] mm
|    |    |    |
|    |    |    +- Drive profile
|    |    |        * Acceleration
|    |    |          100..2000 [800] mm/s²
|    |    |        * Deceleration
|    |    |          100..2000 [800] mm/s²
|    |    |        * Starting jerk
|    |    |          100..2000 [500] mm/s³
|    |    |        * Travel jerk
|    |    |          100..2000 [1000] mm/s³
|    |    |        * Slowing jerk
|    |    |          100..2000 [1000] mm/s³
|    |    |        * Stopping jerk
|    |    |          100..2000 [500] mm/s³
|    |    |
|    |    +- Doors
|    |    |   * Door on parking floor
|    |    |      - Standard
|    |    |      - Remains closed [Default]
|    |    |      - Remains open
|    |    |      - Opens and closes
|    |    |   * Door on remote off floor
|    |    |      - Standard
|    |    |      - Remains closed [Default]
|    |    |      - Remains open
|    |    |      - Opens and closes
|    |    |   * Door at reset
|    |    |      - Opens and closes
|    |    |      - Remains closed [Default]
|    |    |   * Door on landing control off
|    |    |      - Remains open [Default]
|    |    |      - Close when idle
|    |    |   * Door at stopover
|    |    |      - Opens and closes
|    |    |      - Remains closed [Default]
|    |    |   * Door at stopover during priority
|    |    |      - Remains closed [Default]
|    |    |      - Opens and closes
|    |    |   * Door lock condition
|    |    |      - Default [Default]
|    |    |      - SC X5.16 (Shaft door)
|    |    |      - SC X5.17 (Car door A)
|    |    |      - SC X5.18 (Car door B)
|    |    |   * Door lock sig. on saf.light curtain/door sill/em.stop
|    |    |      - off [Default]
|    |    |      - Off after 10 Minutes
|    |    |      - On
|    |    |   * Keep doors on disabled floors locked
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Pre-opening doors
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Keep landing doors locked during door pre-opening
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Doors reverse on landing call
|    |    |      off/1..3/Unlimited [3]
|    |    |   * Start load time automatically on arrival
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door open button operative, if car call is disabled
|    |    |      - on [Default]
|    |    |      - off
|    |    |   * Loadtime acknowledge blinking
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Hall call triggers automatic swing door opener
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Car call triggers automatic swing door opener
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Handle automatic swing door opener like car door
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door condition for the signal door close (66)
```

```
|     |     |      - SC X5.16 (Shaft door) [Default]
|     |     |      - SC X5.17 (Car door A)
|     |     |      - SC X5.18 (Car door B)
|     |     |   * Hall call must be pending for signal door close (66)
|     |     |      - on [Default]
|     |     |      - off
|     |     |   * Advance warning close door until door is closed
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Keep doors open when idle 1..127
|     |     |   * Doors remain closed on exception 1..127
|     |     |   * Doors closed on select.door open 1..127
|     |     |
|     |     +- Load measuring
|     |     |    |
|     |     |    +- Car load parameter
|     |     |    |   * Read settings from device
|     |     |    |      - off [Default]
|     |     |    |      - Execute
|     |     |    |   * No load limit
|     |     |    |      0..65535 [10] kg
|     |     |    |   * Full load limit
|     |     |    |      0..65535 [10] kg
|     |     |    |   * Overload limit
|     |     |    |      0..65535 [10] kg
|     |     |    |   * Send settings to the device
|     |     |    |      - off [Default]
|     |     |    |      - Execute
|     |     |    |
|     |     |    +- Reference weight
|     |     |        * Preset car reference weight
|     |     |          0..65535 [0] kg
|     |     |
|     |     +- Remote Monitoring
|     |     |   * Fault callback
|     |     |      - Off [Default]
|     |     |      - On new stack entry
|     |     |      - If lift is out of service
|     |     |   * Emergency callback
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Maintenance callback
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Message callback
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Auto clock setting via monitoring
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Enable clock setting via monitoring
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Indicate a 1-button collective controller via monitoring
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Turn lift remote off if the BMS/Gateway connection is faulty
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Redialling
|     |     |      off/1..255 [30] min
|     |     |   * Renew Bluetooth pin
|     |     |      - off [Default]
|     |     |      - Execute
|     |     |
|     |     +- Transponder/Codes
|     |
|     +- Times
|     |    |
|     |    +- General times
|     |    |   * Dwell time after car call
|     |    |      1..20 [3] s
|     |    |   * Dwell time after landing call
|     |    |      1..30 [5] s
|     |    |   * Dwell time at lobby floor after landing call
|     |    |      1..30 [5] s
|     |    |   * Dwell time after guest call
|     |    |      1..180 [60] s
|     |    |   * Extra dwell for handicapped accessible car calls
|     |    |      1..30 [5] s
```

```
|     |     |   * Extra dwell for handicapped accessible hall calls
|     |     |      1..30 [5] s
|     |     |   * Parking
|     |     |      off/10..65535 [off] s
|     |     |   * If park floor changed, re-park after
|     |     |      off/10..65535 [15] s
|     |     |   * Allocation time low priority call
|     |     |      10..9999 [60] s
|     |     |   * Allocation time high priority call
|     |     |      10..9999 [60] s
|     |     |   * Allocation time direct run or lift allocation
|     |     |      10..9999 [60] s
|     |     |   * Allocation time service position
|     |     |      1..30 [5] min
|     |     |   * Car light off
|     |     |      off/10..9999 [off] s
|     |     |   * Display off
|     |     |      off/3..9999 [off] s
|     |     |   * Landing displays reduced
|     |     |      off/3..9999 [off] s
|     |     |   * Blue Modus C (Standby) on time
|     |     |      off/1..65535 [30] min
|     |     |   * Blue Modus C (Standby) off delay
|     |     |      off/1..255 [4] s
|     |     |   * Blue Modus B (Shut Down) on time
|     |     |      off/30..65535 [off] min
|     |     |   * Blue Modus B (Shut Down) off delay
|     |     |      off/1..255 [30] s
|     |     |   * Car fan run delay time
|     |     |      off/1..255 [off] s
|     |     |   * Max. car fan run time
|     |     |      off/1..255 [off] min
|     |     |   * Automatic air exchange interval (car fan)
|     |     |      off/1..255 [off] min
|     |     |   * Automatic air exchange duration (car fan)
|     |     |      off/1..255 [off] min
|     |     |   * Arrival indicator delay
|     |     |      off/1..10 [off] s
|     |     |   * Arrival indicator puls time
|     |     |      Impulse/1..30 [3] s
|     |     |   * Speech synthesis delay
|     |     |      off/1..10 [off] s
|     |     |   * Speech synthesis puls time
|     |     |      1..30 [3] s
|     |     |   * Start inhibitor delay time
|     |     |      off/1..15 [off] s
|     |     |   * Selective blocking of hall call directions
|     |     |      off/1..30 [off] s
|     |     |   * Timespan for enabling calls disabled via menu
|     |     |      off/1..120 [off] s
|     |     |   * Signal duration disabled call selected
|     |     |      off/1..60 [3] s
|     |     |   * LCD-illumination
|     |     |      always on/1..60 [15] min
|     |     |   * Automatic LCD-menu homing
|     |     |      off/10..255 [off] min
|     |     |   * Blinking light pulse time (114)
|     |     |      off/0.1..25.5 [off] s
|     |     |   * Generic malfunction delayed (495)
|     |     |      off/1..255 [10] s
|     |     |   * Emergency call unit ready signal delay
|     |     |      off/0.1..6500.0 [10.0] s
|     |     |   * Clearing operation repeat time
|     |     |      off/1..240 [off] min
|     |     |   * Duration advance drive warning
|     |     |      off/1..10 [off] s
|     |     |   * System cold start delay
|     |     |      off/1..255 [off] s
|     |     |   * Automatic Test drive
|     |     |      off/15..65535 [off] min
|     |     |   * Time synchronization impulse
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Time synchronization impulse, time of day
|     |     |      0..23 [0] o'clock
|     |     |
|     |     +- Monitoring times
|     |     |   * Door close monitoring
|     |     |      off/1..60 [20] s
|     |     |   * Door open monitoring
```

```
|     |     |      off/1..60 [20] s
|     |     |   * Door locking monitoring
|     |     |      off/1..60 [10] s
|     |     |   * Manual door monitoring time in group operation
|     |     |      off/1..255 [off] s
|     |     |   * Start control
|     |     |      1..45 [15] s
|     |     |   * Driving monitoring
|     |     |      1..45 [45] s
|     |     |   * Deceleration control
|     |     |      1..30 [15] s
|     |     |   * Re-levelling control
|     |     |      1..45 [20] s
|     |     |   * Pawl device monitoring lifting/lowering
|     |     |      off/1..60 [10] s
|     |     |   * Pawl device monitoring retract/extend
|     |     |      off/1..60 [3] s
|     |     |   * Pawl device monitoring re-pumping
|     |     |      off/1..255 [5] s
|     |     |   * Emergency power sequence monitoring
|     |     |      off/30..255 [60] s
|     |     |   * Emergency power enabling monitoring
|     |     |      off/1..255 [off] s
|     |     |   * Chemical operation monitoring time (timeout)
|     |     |      off/1..255 [off] min
|     |     |   * Automatic emergency rescue monitoring
|     |     |      1..255 [30] s
|     |     |
|     |     +- Drive unit times
|     |     |   * Main contactor debounce time on
|     |     |      off/1..1000 [100] ms
|     |     |   * Main contactor on monitoring time/max. wait time
|     |     |      off/1..3000 [1000] ms
|     |     |   * Main contactor debounce time off
|     |     |      off/1..1000 [100] ms
|     |     |   * Main contactor off monitoring time/max. wait time
|     |     |      off/1..3000 [1000] ms
|     |     |   * Safety brake debounce time
|     |     |      off/1..1000 [100] ms
|     |     |   * Safety brake monitoring time
|     |     |      off/1..3000 [1000] ms
|     |     |   * Brake debounce time on
|     |     |      off/1..1000 [100] ms
|     |     |   * Brake monitoring time on
|     |     |      off/1..3000 [1000] ms
|     |     |   * Brake debounce time off
|     |     |      off/1..1000 [100] ms
|     |     |   * Brake monitoring time off
|     |     |      off/1..3000 [1000] ms
|     |     |   * Main contactor delayed off
|     |     |      off/1..2000 [off] ms
|     |     |   * Star-delta start
|     |     |      off/1..5000 [1000] ms
|     |     |   * Motor delayed off
|     |     |      off/1..5000 [off] ms
|     |     |   * Up-valve delayed close
|     |     |      off/1..5000 [off] ms
|     |     |   * Down-valve delayed close
|     |     |      off/1..5000 [off] ms
|     |     |   * Main contactor delayed off
|     |     |      off/1..2000 [off] ms
|     |     |   * Drive (motor) fan after-run time
|     |     |      off/1..600 [off] s
|     |     |   * Relevelling on delay time
|     |     |      0..10000 [1000] ms
|     |     |   * Relevelling off delay time
|     |     |      0..5000 [0] ms
|     |     |   * Homing time
|     |     |      off/1..60 [15] min
|     |     |   * Fast start activation delay time
|     |     |      off/1..10000 [1000] ms
|     |     |   * Automatic emergency rescue delay
|     |     |      off/1..255 [20] s
|     |     |   * Drop protection monitoring time after deactivation
|     |     |      500..5000 [500] ms
|     |     |   * Pawl device run delay re-pumping
|     |     |      off/1..5000 [100] ms
|     |     |   * Pawl device end switches debounce time
|     |     |      off/1..5000 [100] ms
|     |     |
```

```
|     |     +- Door times
|     |     |   * Dwell time after light curtain
|     |     |      1..20 [1] s
|     |     |   * Dwell time after force limit
|     |     |      1..20 [3] s
|     |     |   * Dwell time after door open button
|     |     |      1..20 [4] s
|     |     |   * Close doors when idle
|     |     |      off/1..240 [8] s
|     |     |   * Advance warning close idle door
|     |     |      off/1..60 [off] s
|     |     |   * Advance warning open door
|     |     |      off/1..15 [off] s
|     |     |   * Advance warning close door
|     |     |      off/1..15 [off] s
|     |     |   * Door nudge time
|     |     |      off/1..60 [off] s
|     |     |   * Advance warning door nudging
|     |     |      off/1..15 [off] s
|     |     |   * Load time 1
|     |     |      off/1..239/Unlimited [1] min
|     |     |   * Load time 2
|     |     |      off/1..239/Unlimited [1] min
|     |     |   * Enable motion detector after
|     |     |      off/1..10000 [off] ms
|     |     |   * Disable motion detector after
|     |     |      off/1..20000 [off] ms
|     |     |   * Motion detector timeout
|     |     |      off/1..60 [18] s
|     |     |   * Monitoring time door open
|     |     |      off/1..60 [10] s
|     |     |   * Monitoring time door close
|     |     |      off/1..60 [10] s
|     |     |   * Delay for signal close door (66)
|     |     |      off/1..600 [off] s
|     |     |   * Duration signal close door (66)
|     |     |      1..20 [3] s
|     |     |   * Repeat delay signal close door (66)
|     |     |      off/1..600 [15] s
|     |     |   * Door open with delay
|     |     |      off/1..10000 [off] ms
|     |     |   * Door close with delay
|     |     |      off/1..10000 [off] ms
|     |     |   * Idle period during door reverse move
|     |     |      off/1..3000 [100] ms
|     |     |   * Door motor delayed off at open limit switch
|     |     |      off/1..10000 [250] ms
|     |     |   * Door motor delayed off with close switch
|     |     |      off/1..10000 [250] ms
|     |     |   * Door motor off, if door is closed, after
|     |     |      off/1..240 [off] s
|     |     |   * Door motor off if door is opened, after
|     |     |      off/1..240 [off] s
|     |     |   * Lock debounce timer
|     |     |      off/1..2000 [300] ms
|     |     |   * Lock delay before start
|     |     |      off/1..10000 [off] ms
|     |     |   * Lock delay after stop
|     |     |      off/1..10000 [off] ms
|     |     |   * Sig. debounce time door open monitoring
|     |     |      100..5000 [2000] ms
|     |     |   * Monitor of time SLC
|     |     |      off/1..10 [3] s
|     |     |   * Duration auto. swing door opener signal
|     |     |      off/1..255 [off] s
|     |     |   * Delay time automatic swing door opener
|     |     |      100..2000 [250] ms
|     |     |   * Door-close-btn. or car call cancels swing door opener time
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Scheduler
|     |         * Timer 1..16
|     |
|     +- Floors
|     |     |
|     |     +- Special floors
|     |     |   * Lobby floor
|     |     |      off/1..16 [off]
|     |     |   * Parking floor
```

```
|    |    |      off/1..16 [off]
|    |    |   * Parking in hidden position
|    |    |      off/1..1200 [off] mm
|    |    |   * Enable parking at floors with no doors
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Control floor remote off
|    |    |      off/1..16 [off]
|    |    |   * Remote off floor
|    |    |      off/1..16 [off]
|    |    |   * Remote off in hidden position
|    |    |      off/1..1200 [off] mm
|    |    |   * Peak-up floor
|    |    |      off/1..16 [off]
|    |    |   * Peak-down floor
|    |    |      off/1..16 [off]
|    |    |   * Fire recall floor
|    |    |      off/1..16 [off]
|    |    |   * Alternate fire recall floor
|    |    |      off/1..16 [off]
|    |    |   * Emergency power floor
|    |    |      off/1..16 [off]
|    |    |   * Blue Modus floor
|    |    |      off/1..16 [off]
|    |    |   * Blue Mode in hidden position
|    |    |      off/1..1200 [off] mm
|    |    |   * Service floor
|    |    |      off/1..16 [off]
|    |    |   * Control floor generic
|    |    |      off/1..16 [off]
|    |    |   * Lift allocation floor
|    |    |      off/1..16 [off]
|    |    |   * Cleaning floor
|    |    |      off/1..16 [off]
|    |    |   * Docking service floor 1..8
|    |    |      off/1..16 [off]
|    |    |   * Fire alarm return floor 1..16
|    |    |      off/1..16 [off]
|    |    |
|    |    +- Floor names
|    |    |   * Floor text 1..127
|    |    |   * Send floor text
|    |    |      - off [Default]
|    |    |      - on
|    |    |
|    |    +- Disable calls
|    |    |   * Keep car call at lobby enabled, on signal "Disable all car calls"
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Car calls disabled 1..127
|    |    |   * Landing calls disabled 1..127
|    |    |
|    |    +- 7-segment displays
|    |        * Custom display encoding
|    |           - off [Default]
|    |           - on
|    |        * Bit mask floor 1..63
|    |
|    +- Temperatures
|    |   * Overtemperature comparator (238)
|    |      -55.0..125.0 [35.0] °C
|    |   * Undertemperature comparator (239)
|    |      -55.0..125.0 [7.0] °C
|    |   * Max. Machine room temperature
|    |      10.0..125.0 [60.0] °C
|    |   * Min. Machine room temperature
|    |      -50.0..30.0 [-5.0] °C
|    |
|    +- Shaft encoding
|         |
|         +- Parameter
|         |    |
|         |    +- General ways
|         |    |   * Shaft pit area
|         |    |      350..65000 [1000] mm
|         |    |   * Shaft head area
|         |    |      350..65000 [1500] mm
|         |    |   * Car height
|         |    |      500..10000 [2000] mm
|         |    |   * Upper door zone
```

```
|         |    |      10..350 [150] mm
|         |    |   * Lower door zone
|         |    |      10..350 [150] mm
|         |    |   * Upper level zone
|         |    |      1..350 [10] mm
|         |    |   * Lower level zone
|         |    |      1..350 [10] mm
|         |    |   * Re-level area up
|         |    |      2..350 [20] mm
|         |    |   * Re-level area down
|         |    |      2..350 [20] mm
|         |    |   * Pawl device lifting distance
|         |    |      0..500 [50] mm
|         |    |   * Inspection stop before top floor level
|         |    |      off/1..3000 [off] mm
|         |    |   * Inspection stop before bottom floor level
|         |    |      off/1..3000 [off] mm
|         |    |   * Distance driving monitoring
|         |    |      100..50000 [500] mm
|         |    |   * Stop before floor level on automatic rescue operation
|         |    |      off/1..9999 [100] mm
|         |    |
|         |    +- Speed difference
|         |    |   * Signal (201) at v <
|         |    |      off/1..65535 [off] mm/s
|         |    |   * Signal (202) at v <
|         |    |      off/1..65535 [off] mm/s
|         |    |   * Signal (203) at v <
|         |    |      off/1..65535 [off] mm/s
|         |    |   * Run-in velocity pre-opening doors
|         |    |      0..800 [800] mm/s
|         |    |
|         |    +- Position threshold
|         |    |   * Signal (581) at position >
|         |    |      off/1..500000 [off] mm
|         |    |   * Signal (582) at position >
|         |    |      off/1..500000 [off] mm
|         |    |   * Signal (583) at position >
|         |    |      off/1..500000 [off] mm
|         |    |   * Signal (584) at position >
|         |    |      off/1..500000 [off] mm
|         |    |
|         |    +- Offset corr. top
|         |    |   * Offset correction top 1..127
|         |    |      off/1..1000 [off] mm
|         |    |
|         |    +- Offset corr. bot.
|         |    |   * Offset correction bottom 1..127
|         |    |      off/1..1000 [off] mm
|         |    |
|         |    +- Offset corr. upward
|         |    |   * Offset correction upward 1..127
|         |    |      off/1..1000 [off] mm
|         |    |
|         |    +- Offset corr. downw.
|         |        * Offset correction downward 1..127
|         |           off/1..1000 [off] mm
|         |
|         +- Level positions
|         |   * Level position 1..127
|         |      0..1000000 [0] mm
|         |
|         +- Learn mode
|              |
|              +- Change encoder
|              |
|              +- Clear level data
|
+- Maintenance
|    |
|    +- Maintenance function
|    |   * Random calls
|    |      - off [Default]
|    |      - Not limited
|    |      - Limited to 100 trips
|    |      - Limited to 500 trips
|    |      - Shuttle upper/lower floor
|    |   * Engineer on side
|    |      - off [Default]
|    |      - on
```

```
|     |   * Doors during maintenance
|     |      - Normal [Default]
|     |      - Keep doors  closed, until reset
|     |      - Keep doors  closed, still after reset
|     |   * Drive to the service floor
|     |      off/1..16 [off]
|     |   * Enable the service position to be in the shaft pit area
|     |      - off [Default]
|     |      - on
|     |   * Enable assembly mode
|     |      - off [Default]
|     |      - on
|     |   * Assembly mode with pre-limit switches (S81/S82)
|     |      - off
|     |      - on [Default]
|     |   * Ignore safety light curtain or door sill on assembly mode
|     |      - off [Default]
|     |      - on
|     |   * Enable Ero outside limits
|     |      - off [Default]
|     |      - turned on once
|     |      - permanent activated
|     |   * Enable door open/close button on Inspection control
|     |      - off [Default]
|     |      - on
|     |   * Floor display on Ins/Ero
|     |      - off [Default]
|     |      - on
|     |   * Controlled deceleration on Ero operation
|     |      - on [Default]
|     |      - off
|     |   * Enable Inspection drive by turning maintenance on
|     |      - off [Default]
|     |      - on
|     |   * Inspection speed
|     |      - Slow [Default]
|     |      - Fast
|     |   * Inspection run operated by car panel
|     |      - off [Default]
|     |      - on
|     |   * Enable remote activation oversp. gov.
|     |      - off [Default]
|     |      - on for 5 minutes
|     |      - permanent on
|     |   * Drive tuning operation
|     |      - off [Default]
|     |      - on
|     |   * Drive data transfer from electronic nameplate
|     |      - off [Default]
|     |      - Execute
|     |   * UPS-Test operation mode
|     |      - off [Default]
|     |      - Short test
|     |      - Long test
|     |
|     +- Maintenance settings
|     |   * Trip counter interval
|     |      off/1..4294967295 [off]
|     |   * Hourly meter interval
|     |      off/0.1..429496729.5 [off] h
|     |   * Maintenance date
|     |   * Cyclic interval trip counter
|     |      off/1..4294967295 [off]
|     |   * Cyclic interval hour meter
|     |      off/0.1..429496729.5 [off] h
|     |   * Cyclic interval in months
|     |      off/1..65535 [off]
|     |   * Set new maintenance intervals
|     |      - off [Default]
|     |      - Execute
|     |
|     +- Maintenance stack
|     |
|     +- System data
|     |    |
|     |    +- Print system data
|     |    |
|     |    +- Print menu tree
|     |    |
|     |    +- Save logs
```

```
|    |    |
|    |    +- Save parameters
|    |    |
|    |    +- Save factory default
|    |
|    +- Testing
|    |    |
|    |    +- UCM-Test (A3)
|    |    |   * Code for Tests
|    |    |   * UCM-test (A3) with doors open
|    |    |      - off
|    |    |      - on [Default]
|    |    |   * Enable UCM-test (A3)
|    |    |      - off [Default]
|    |    |      - on, using drive
|    |    |      - on, using brake
|    |    |
|    |    +- Brake test
|    |    |   * Code for Tests
|    |    |   * Brake test velocity
|    |    |      - V0 (Creeping velocity)
|    |    |      - V1
|    |    |      - V2
|    |    |      - V3
|    |    |      - V4
|    |    |      - V5
|    |    |      - V6
|    |    |      - V7
|    |    |      - VN (Releveling velocity)
|    |    |      - VI (Inspection velocity)
|    |    |      - VR (Emerg. rescue velocity) [Default]
|    |    |   * Enable brake test
|    |    |      - off [Default]
|    |    |      - on
|    |    |
|    |    +- Limit switch test
|    |    |   * Code for Tests
|    |    |   * Enable limit switch test
|    |    |      - off [Default]
|    |    |      - on
|    |    |
|    |    +- Driving monitoring
|    |    |   * Code for Tests
|    |    |   * Enable driving monitoring test
|    |    |      - off [Default]
|    |    |      - on
|    |    |
|    |    +- Functions
|    |        * Code for Tests
|    |        * Ignore overload signal until restart
|    |           - off [Default]
|    |           - on
|    |
|    +- Lock floors/doors
|    |   * Door disabling table 1..127
|    |
|    +- Times/statistic
|         |
|         +- Door cycle counter
|         |
|         +- Trip counter
|         |
|         +- Times
|
+- Enter calls
|    |
|    +- Car calls
|    |
|    +- Car calls handicap.
|    |
|    +- Low prio. car calls
|    |
|    +- Landing calls
|    |
|    +- Landings up
|    |
|    +- Landings down
|    |
|    +- Landing calls extra
|    |
```

```
|    +- Landings up extra
|    |
|    +- Landings down extra
|    |
|    +- Priority calls
|    |
|    +- High priority calls
|
+- Tripcnt/hours meter
|
+- System info
|
+- Sundries
     |
     +- Setup info
     |
     +- Access codes
     |   * Service code
     |   * Info code
     |
     +- Date/Time
     |
     +- Commands
         * Revoke remote off via remote monitoring
            - off [Default]
            - Execute
         * Revoke landing control off via remote monitoring
            - off [Default]
            - Execute
         * Enable floors locked by remote monitoring
            - off [Default]
            - Execute
         * Fire alarm reset
            - off [Default]
            - Execute
         * Fire service reset
            - off [Default]
            - Execute
         * Chemical operation reset
            - off [Default]
            - Execute
         * Allocation operation reset
            - off [Default]
            - Execute
         * Pawl device extend
            - off [Default]
            - Execute
         * Pawl device retract
            - off [Default]
            - Execute
```

C Setup Menu Quick Reference

Program Version: 88D2402B (14/02/2014)

```
Setup Menu
==========
+- Parameter
|     |
|     +- Lift data
|     |   * Top terminal floor
|     |      2..127 [16]
|     |   * Bottom terminal floor
|     |      1..126 [1]
|     |   * Type of lift
|     |      - Traction lift [Default]
|     |      - Hydraulic lift
|     |   * Drive type traction
|     |      - Single speed
|     |      - Two speed [Default]
|     |      - Variable frequency (CANopen)
|     |      - Variable frequency (DCP)
|     |      - Variable frequency (Parallel)
|     |   * CANopen Mode (profile)
|     |      - Position Profile Mode [Default]
|     |      - Speed Profile Mode
|     |   * Parallel Mode
|     |      - KEB binary [Default]
|     |      - Universal 1-out-of-n
|     |      - Universal 1-out-of-n (VN)
|     |      - Fuji binary
|     |      - Schindler VF11/22/33/44BR
|     |   * Drive type hydraulic
|     |      - unregulated [Default]
|     |      - LRV/iValve (Bucher)
|     |      - NGV (GMV)
|     |      - NGV A3 (GMV)
|     |      - AZFR (ALGI)
|     |      - AZRS (ALGI)
|     |      - regulated with DCP control
|     |      - BLAIN (SEV)
|     |   * DCP Mode (profile)
|     |      - DCP4+ (continuous brake distance feedback) [Default]
|     |      - DCP4 (Brake distance feedback before start)
|     |      - DCP3
|     |      - Bucher
|     |      - DCP-01
|     |   * DCP 16-bit mode
|     |      - off [Default]
|     |      - on
|     |   * Motor control
|     |      - Direct on line
|     |      - Star / delta
|     |      - Soft starter [Default]
|     |      - Frequency controlled
|     |   * Separate relevelling unit
|     |      - off [Default]
|     |      - up only
|     |      - down only
|     |      - up and down
|     |   * Drive upward using overtravel and relevelling
|     |      - off [Default]
|     |      - on
|     |   * Type of system
|     |      - Single lift [Default]
|     |      - Group lift 1
|     |      - Group lift 2
|     |      - Group lift 3
|     |      - Group lift 4
|     |      - Group lift 5
|     |      - Group lift 6
|     |      - Group lift 7
|     |      - Group lift 8
|     |   * Type of call system
|     |      - Collective controller [Default]
|     |      - PB - without call storage
|     |      - APB - with call storage
|     |      - Simple one button collective direction dependend
|     |      - Simple one button collective direction independend
```

```
|     |   * Floor selector type
|     |      - Floor selector emulation
|     |      - Absolute encoder (CAN) [Default]
|     |      - Using 4 switches impulse & level
|     |      - Using 6 switches 2 impulse & 2 level
|     |      - Absolute encoder emulation
|     |      - Absolute encoder AWG-05 (RS-485)
|     |   * Protective Circuit (SMZ)
|     |      - Off [Default]
|     |      - on, without blocking
|     |      - on, with blocking
|     |      - On, Test only
|     |   * Rated load
|     |      100..65535 [630] kg
|     |
|     +- Terminals
|     |    |
|     |    +- Control Terminals
|     |    |    |
|     |    |    +- Input terminals
|     |    |    |   * Virtual input 1..48
|     |    |    |
|     |    |    +- Output terminals
|     |    |    |   * Virtual output 1..48
|     |    |    |
|     |    |    +- Call terminals
|     |    |    |   * Virtual input 1..48
|     |    |    |
|     |    |    +- Relay
|     |    |    |   * Virtual output 1..48
|     |    |    |
|     |    |    +- Remote monit. terminals
|     |    |         |
|     |    |         +- Monitoring input
|     |    |         |   * Monitoring Input 1..32
|     |    |         |
|     |    |         +- Monitoring output
|     |    |             * Monitoring output 1..32
|     |    |
|     |    +- Terminals CAN 1
|     |    |
|     |    +- Terminals CAN 2
|     |    |
|     |    +- SLP-Terminals
|     |         |
|     |         +- SLP-Input terminals
|     |         |   * SLP Virtual input 1..80
|     |         |
|     |         +- SLP-Output termin.
|     |         |   * SLP Virtual output 1..80
|     |         |
|     |         +- Call terminals
|     |         |   * SLP Virtual input 1..80
|     |         |
|     |         +- Relay
|     |             * SLP Virtual output 1..80
|     |
|     +- Floor Selector
|     |    |
|     |    +- APS1 settings
|     |        * Type
|     |          - User defined
|     |          - Rotary encoder 458 mm [Default]
|     |          - Rotary encoder 256 mm
|     |          - Limax-2 0.5 mm
|     |          - USP 0.1 mm
|     |        * Code sequence
|     |          - Clockwise [Default]
|     |          - Counter clockwise
|     |        * Resolution
|     |          1..65535 [1024]
|     |        * Length
|     |          1..65535 [458] mm
|     |        * Scaling function
|     |          - Disabled
|     |          - Enabled [Default]
|     |        * Offset
|     |          0..4294967295 [0]
|     |        * Write configuration
|     |          - off [Default]
```

```
|    |          - Execute
|    |
|    +- Doors
|    |    |
|    |    +- Door settings
|    |    |   * Door count
|    |    |      1..3 [1]
|    |    |   * Operating mode
|    |    |      - Selective [Default]
|    |    |      - Selective, alternate locked
|    |    |      - simultaneous (not selective)
|    |    |
|    |    +- Door table
|    |    |   * Door table 1..127
|    |    |   * Second door table (signal 80) 1..127
|    |    |   * Third door table (signal 380) 1..127
|    |    |
|    |    +- Door A settings
|    |    |   * Landing door type
|    |    |      - Automatically operated [Default]
|    |    |      - Manually operated
|    |    |   * Car door type
|    |    |      - Automatic door (parallel) [Default]
|    |    |      - Automatic door (CANopen)
|    |    |      - none
|    |    |      - Door simulation
|    |    |      - Manually operated
|    |    |   * Door open limit
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door close limit
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door close button enabled on limit switch
|    |    |      - off
|    |    |      - on [Default]
|    |    |   * Door motor at open limit switch
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door motor at close limit switch
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Safety light curtains
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Retiring cam
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door A enabling (435)
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door close sig. on, if Ins/Ero
|    |    |      - off [Default]
|    |    |      - on
|    |    |
|    |    +- Door B settings
|    |    |   * Landing door type
|    |    |      - Automatically operated [Default]
|    |    |      - Manually operated
|    |    |   * Car door type
|    |    |      - Automatic door (parallel) [Default]
|    |    |      - Automatic door (CANopen)
|    |    |      - none
|    |    |      - Door simulation
|    |    |      - Manually operated
|    |    |   * Door open limit
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door close limit
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door close button enabled on limit switch
|    |    |      - off
|    |    |      - on [Default]
|    |    |   * Door motor at open limit switch
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * Door motor at close limit switch
|    |    |      - off [Default]
|    |    |      - on
```

```
|     |     |   * Safety light curtains
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Retiring cam
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Door B enabling (436)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Door close sig. on, if Ins/Ero
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Door C settings
|     |         * Landing door type
|     |            - Automatically operated [Default]
|     |            - Manually operated
|     |         * Car door type
|     |            - Automatic door (parallel) [Default]
|     |            - Automatic door (CANopen)
|     |            - none
|     |            - Door simulation
|     |            - Manually operated
|     |         * Door open limit
|     |            - off [Default]
|     |            - on
|     |         * Door close limit
|     |            - off [Default]
|     |            - on
|     |         * Door close button enabled on limit switch
|     |            - off
|     |            - on [Default]
|     |         * Door motor at open limit switch
|     |            - off [Default]
|     |            - on
|     |         * Door motor at close limit switch
|     |            - off [Default]
|     |            - on
|     |         * Safety light curtains
|     |            - off [Default]
|     |            - on
|     |         * Retiring cam
|     |            - off [Default]
|     |            - on
|     |         * Door C enabling (437)
|     |            - off [Default]
|     |            - on
|     |         * Door close sig. on, if Ins/Ero
|     |            - off [Default]
|     |            - on
|     |
|     +- Interfaces
|     |     |
|     |     +- CAN ports
|     |     |     |
|     |     |     +- CAN 1 port
|     |     |     |   * Interface
|     |     |     |      - off
|     |     |     |      - on [Default]
|     |     |     |   * Baud rate
|     |     |     |      - 250 kBit/s [Default]
|     |     |     |      - 125 kBit/s
|     |     |     |   * CLK Monitoring
|     |     |     |      - off [Default]
|     |     |     |      - on
|     |     |     |
|     |     |     +- CAN 2 port
|     |     |         * Interface
|     |     |            - off [Default]
|     |     |            - on
|     |     |         * Baud rate
|     |     |            - 250 kBit/s [Default]
|     |     |            - 125 kBit/s
|     |     |         * Function
|     |     |            - RDT-300
|     |     |            - EIS-300
|     |     |            - DCP (RS-485)
|     |     |            - DCP logging
|     |     |            - APS logging
|     |     |            - Energy meter (UMG)
```

```
|     |     |     |           - GDB
|     |     |     |           - SAP
|     |     |     |           - SLP
|     |     |     |           - AWG-05 (RS-485)
|     |     |     |           - USV (Effekta)
|     |     |     |           - LIN bus master
|     |     |     |        * Modem device
|     |     |     |           - Analog modem
|     |     |     |           - ISDN
|     |     |     |           - GSM
|     |     |     |           - FirePlug (Bluetooth)
|     |     |     |           - EA-GSM Modem (Leitronic)
|     |     |     |           - EA-GSM Internet (Leitronic)
|     |     |     |           - GPRS/UMTS
|     |     |     |
|     |     |     +- Serial ports
|     |     |     |    |
|     |     |     |    +- Serial interface 1
|     |     |     |    |   * Function
|     |     |     |    |      - RDT-300
|     |     |     |    |      - EIS-300
|     |     |     |    |      - DCP (RS-485)
|     |     |     |    |      - DCP logging
|     |     |     |    |      - APS logging
|     |     |     |    |      - Energy meter (UMG)
|     |     |     |    |      - GDB
|     |     |     |    |      - SAP
|     |     |     |    |      - SLP
|     |     |     |    |      - AWG-05 (RS-485)
|     |     |     |    |      - USV (Effekta)
|     |     |     |    |      - LIN bus master
|     |     |     |    |   * Baud rate
|     |     |     |    |      - 1200 Bit/s
|     |     |     |    |      - 2400 Bit/s
|     |     |     |    |      - 4800 Bit/s
|     |     |     |    |      - 9600 Bit/s
|     |     |     |    |      - 19200 Bit/s
|     |     |     |    |      - 38400 Bit/s
|     |     |     |    |      - 57600 Bit/s
|     |     |     |    |      - 115200 Bit/s [Default]
|     |     |     |    |   * Parity
|     |     |     |    |      - none [Default]
|     |     |     |    |      - odd
|     |     |     |    |      - even
|     |     |     |    |   * Modem device
|     |     |     |    |      - Analog modem
|     |     |     |    |      - ISDN
|     |     |     |    |      - GSM
|     |     |     |    |      - FirePlug (Bluetooth)
|     |     |     |    |      - EA-GSM Modem (Leitronic)
|     |     |     |    |      - EA-GSM Internet (Leitronic)
|     |     |     |    |      - GPRS/UMTS
|     |     |     |    |   * Faults on service
|     |     |     |    |      - off [Default]
|     |     |     |    |      - on
|     |     |     |    |   * Legacy Mode
|     |     |     |    |      - on [Default]
|     |     |     |    |      - off
|     |     |     |    |   * Parking trip after setting the parking floor via EIS-300
|     |     |     |    |      - off [Default]
|     |     |     |    |      - on
|     |     |     |    |   * Callback server usage (Internet)
|     |     |     |    |      - off [Default]
|     |     |     |    |      - on
|     |     |     |    |   * Access Point Name (APN)
|     |     |     |    |   * Access Point User (APN)
|     |     |     |    |   * Access Point Password (APN)
|     |     |     |    |   * IP Callback server
|     |     |     |    |   * Host name Callback server
|     |     |     |    |   * Port Callback server (Call Acceptance)
|     |     |     |    |      1..65535 [9001]
|     |     |     |    |   * Access password callback server
|     |     |     |    |
|     |     |     |    +- Serial interface 2
|     |     |     |    |   * Function
|     |     |     |    |      - off [Default]
|     |     |     |    |      - Debug
|     |     |     |    |      - RDT-300
|     |     |     |    |      - EIS-300
|     |     |     |    |      - DCP (RS-485)
```

```
|   |   |   |      - DCP logging
|   |   |   |      - APS logging
|   |   |   |      - Energy meter (UMG)
|   |   |   |      - GDB
|   |   |   |      - SAP
|   |   |   |      - SLP
|   |   |   |      - AWG-05 (RS-485)
|   |   |   |      - USV (Effekta)
|   |   |   |      - LIN bus master
|   |   |   |   * Baud rate
|   |   |   |      - 1200 Bit/s
|   |   |   |      - 2400 Bit/s
|   |   |   |      - 4800 Bit/s
|   |   |   |      - 9600 Bit/s
|   |   |   |      - 19200 Bit/s
|   |   |   |      - 38400 Bit/s
|   |   |   |      - 57600 Bit/s
|   |   |   |      - 115200 Bit/s [Default]
|   |   |   |   * Parity
|   |   |   |      - none [Default]
|   |   |   |      - odd
|   |   |   |      - even
|   |   |   |   * Modem device
|   |   |   |      - Analog modem
|   |   |   |      - ISDN
|   |   |   |      - GSM
|   |   |   |      - FirePlug (Bluetooth)
|   |   |   |      - EA-GSM Modem (Leitronic)
|   |   |   |      - EA-GSM Internet (Leitronic)
|   |   |   |      - GPRS/UMTS
|   |   |   |   * Faults on service
|   |   |   |      - off [Default]
|   |   |   |      - on
|   |   |   |   * Legacy Mode
|   |   |   |      - on [Default]
|   |   |   |      - off
|   |   |   |   * Parking trip after setting the parking floor via EIS-300
|   |   |   |      - off [Default]
|   |   |   |      - on
|   |   |   |   * Callback server usage (Internet)
|   |   |   |      - off [Default]
|   |   |   |      - on
|   |   |   |   * Access Point Name (APN)
|   |   |   |   * IP Callback server
|   |   |   |   * Host name Callback server
|   |   |   |   * Port Callback server (Call Acceptance)
|   |   |   |      1..65535 [9001]
|   |   |   |   * Access password callback server
|   |   |   |
|   |   |   +- Serial interface 3
|   |   |   |   * Function
|   |   |   |      - RDT-300
|   |   |   |      - EIS-300
|   |   |   |      - DCP (RS-485) [Default]
|   |   |   |      - DCP logging
|   |   |   |      - APS logging
|   |   |   |      - Energy meter (UMG)
|   |   |   |      - GDB
|   |   |   |      - SAP
|   |   |   |      - SLP
|   |   |   |      - AWG-05 (RS-485)
|   |   |   |      - USV (Effekta)
|   |   |   |      - LIN bus master
|   |   |   |   * Baud rate
|   |   |   |      - 1200 Bit/s
|   |   |   |      - 2400 Bit/s
|   |   |   |      - 4800 Bit/s
|   |   |   |      - 9600 Bit/s
|   |   |   |      - 19200 Bit/s
|   |   |   |      - 38400 Bit/s [Default]
|   |   |   |      - 57600 Bit/s
|   |   |   |      - 115200 Bit/s
|   |   |   |
|   |   |   +- Serial interface 4
|   |   |       * Function
|   |   |          - RDT-300
|   |   |          - EIS-300
|   |   |          - DCP (RS-485)
|   |   |          - DCP logging
|   |   |          - APS logging
```

```
|     |     |           - Energy meter (UMG)
|     |     |           - GDB
|     |     |           - SAP
|     |     |           - SLP
|     |     |           - AWG-05 (RS-485)
|     |     |           - USV (Effekta)
|     |     |           - LIN bus master
|     |     |        * Baud rate
|     |     |           - 1200 Bit/s
|     |     |           - 2400 Bit/s
|     |     |           - 4800 Bit/s
|     |     |           - 9600 Bit/s
|     |     |           - 19200 Bit/s
|     |     |           - 38400 Bit/s [Default]
|     |     |           - 57600 Bit/s
|     |     |           - 115200 Bit/s
|     |     |
|     |     +- USB-B (device)
|     |     |   * Function
|     |     |      - RDT-300 [Default]
|     |     |      - EIS-300
|     |     |      - DCP (RS-485)
|     |     |      - DCP logging
|     |     |      - APS logging
|     |     |      - Energy meter (UMG)
|     |     |      - GDB
|     |     |      - SAP
|     |     |      - SLP
|     |     |      - AWG-05 (RS-485)
|     |     |      - USV (Effekta)
|     |     |      - LIN bus master
|     |     |   * Device number
|     |     |      0..99 [0]
|     |     |
|     |     +- USB-A (host)
|     |     |   * Function
|     |     |      - RDT-300
|     |     |      - EIS-300
|     |     |      - DCP (RS-485)
|     |     |      - DCP logging
|     |     |      - APS logging
|     |     |      - Energy meter (UMG)
|     |     |      - GDB
|     |     |      - SAP
|     |     |      - SLP
|     |     |      - AWG-05 (RS-485)
|     |     |      - USV (Effekta)
|     |     |      - LIN bus master
|     |     |   * Modem device
|     |     |      - Analog modem
|     |     |      - ISDN
|     |     |      - GSM
|     |     |      - FirePlug (Bluetooth)
|     |     |      - EA-GSM Modem (Leitronic)
|     |     |      - EA-GSM Internet (Leitronic)
|     |     |      - GPRS/UMTS
|     |     |   * Baud rate
|     |     |      - 1200 Bit/s
|     |     |      - 2400 Bit/s
|     |     |      - 4800 Bit/s
|     |     |      - 9600 Bit/s
|     |     |      - 19200 Bit/s
|     |     |      - 38400 Bit/s
|     |     |      - 57600 Bit/s
|     |     |      - 115200 Bit/s [Default]
|     |     |   * Faults on service
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Legacy Mode
|     |     |      - on [Default]
|     |     |      - off
|     |     |   * Enable diagnostic callback triggered by emergency call unit
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Callback server usage (Internet)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Access Point Name (APN)
|     |     |   * Access Point User (APN)
|     |     |   * Access Point Password (APN)
```

```
|     |     |   * IP Callback server
|     |     |   * Host name Callback server
|     |     |   * Port Callback server (Call Acceptance)
|     |     |      1..65535 [9001]
|     |     |   * Access password callback server
|     |     |
|     |     +- Network connection
|     |     |   * Interface
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * IP address
|     |     |   * Subnet-mask
|     |     |   * Gateway
|     |     |   * Primary DNS
|     |     |   * Secondary DNS
|     |     |   * Function
|     |     |      - RDT-300 [Default]
|     |     |      - EIS-300
|     |     |      - DCP (RS-485)
|     |     |      - DCP logging
|     |     |      - APS logging
|     |     |      - Energy meter (UMG)
|     |     |      - GDB
|     |     |      - SAP
|     |     |      - SLP
|     |     |      - AWG-05 (RS-485)
|     |     |      - USV (Effekta)
|     |     |      - LIN bus master
|     |     |   * Port
|     |     |      1..65535 [8000]
|     |     |   * Callback server usage
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * IP Callback server
|     |     |   * Host name Callback server
|     |     |   * Port Callback server (Call Acceptance)
|     |     |      1..65535 [9001]
|     |     |   * Access password callback server
|     |     |
|     |     +- Modem
|     |         * Additional init string
|     |         * ISDN MSN (own telephone number)
|     |         * ISDN B-channel protocol
|     |            - default [Default]
|     |            - X.75
|     |         * Number of rings to answer
|     |            1..9 [1]
|     |         * Afterrun time telephone/modem selector
|     |            off/1..30 [4] min
|     |         * GSM code
|     |         * Bluetooth/WiFi friendly name extension
|     |         * Bluetooth code
|     |
|     +- Energy meter
|     |   * Current transformer, primary
|     |      1..10000 [5] A
|     |   * Current transformer, secondary
|     |      1..5 [5] A
|     |
|     +- SAP
|         * Mounting 1st SAP
|            - Top terminal floor [Default]
|            - Bottom terminal floor
|         * Call assignment
|            - Normal (1 door) [Default]
|            - Selective (2 doors)
|            - Extra (1 door)
|         * Calls over group
|            - off [Default]
|            - on
|         * Flexible priority
|            - off [Default]
|            - on
|         * Selective gong
|            - off [Default]
|            - on
|         * Function A4
|            - off [Default]
|            - Out of service (46)
|            - Lift occupied (45)
```

```
|           - Low priority hall call acknowledge
|           - Door gong
|           - Door gong up
|           - Door gong down
|        * Drive direction mapped to floor byte
|           - off [Default]
|           - on
|
+- Functions
|    |
|    +- User Interface
|    |   * Language
|    |      - English
|    |      - Deutsch [Default]
|    |      - Nederlands
|    |      - Français
|    |      - Italiana
|    |      - Svenska
|    |      - Polski
|    |      - Russian
|    |      - Türkçe
|    |      - Magyar
|    |   * Secondary Language
|    |      - English [Default]
|    |      - Deutsch
|    |      - Nederlands
|    |      - Français
|    |      - Italiana
|    |      - Svenska
|    |      - Polski
|    |      - Russian
|    |      - Türkçe
|    |      - Magyar
|    |
|    +- Controller
|    |    |
|    |    +- Monitoring
|    |    |   * Unattended car movement (UCM)
|    |    |      - Off
|    |    |      - on, with blocking [Default]
|    |    |   * Generic monitoring 1 (30)
|    |    |      - off [Default]
|    |    |      - on, stop at floor
|    |    |      - on, immediately
|    |    |      - on, blocked mode at floor
|    |    |      - on, blocked mode immediately
|    |    |   * Text generic monitoring 1 (30)
|    |    |      - Generic monitoring [Default]
|    |    |      - UPS monitoring
|    |    |      - Vandalism monitoring
|    |    |      - Motor protection monitoring
|    |    |      - Safety contactor monitoring
|    |    |      - ...
|    |    |   * Ins/Ero ignores generic monitoring 1 (30)
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * BlueModus ignores generic monitoring 1 (30)
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * General monitoring 1 (30) delay
|    |    |      off/0.1..6500.0 [off] s
|    |    |   * Generic monitoring 2 (53)
|    |    |      - off [Default]
|    |    |      - on, stop at floor
|    |    |      - on, immediately
|    |    |      - on, blocked mode at floor
|    |    |      - on, blocked mode immediately
|    |    |   * Text generic monitoring 2 (53)
|    |    |      - Generic monitoring [Default]
|    |    |      - UPS monitoring
|    |    |      - Vandalism monitoring
|    |    |      - Motor protection monitoring
|    |    |      - Safety contactor monitoring
|    |    |      - ...
|    |    |   * Ins/Ero ignores generic monitoring 2 (53)
|    |    |      - off [Default]
|    |    |      - on
|    |    |   * BlueModus ignores generic monitoring 2 (53)
|    |    |      - off [Default]
|    |    |      - on
```

```
|     |     |   * General monitoring 2 (53) delay
|     |     |      off/0.1..6500.0 [off] s
|     |     |   * Generic monitoring 3 (257)
|     |     |      - off [Default]
|     |     |      - on, stop at floor
|     |     |      - on, immediately
|     |     |      - on, blocked mode at floor
|     |     |      - on, blocked mode immediately
|     |     |   * Text generic monitoring 3 (257)
|     |     |      - Generic monitoring [Default]
|     |     |      - UPS monitoring
|     |     |      - Vandalism monitoring
|     |     |      - Motor protection monitoring
|     |     |      - Safety contactor monitoring
|     |     |      - ...
|     |     |   * Ins/Ero ignores generic monitoring 3 (257)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * BlueModus ignores generic monitoring 3 (257)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * General monitoring 3 (257) delay
|     |     |      off/0.1..6500.0 [off] s
|     |     |   * Light supply monitoring (36)
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Car light monitoring (52)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Machine room temp. monitoring (38)
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Monitoring UPS
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Supervision control signal door relay
|     |     |      - Off [Default]
|     |     |      - on, with blocking
|     |     |   * Hall door monitoring using separate door contacts
|     |     |      - off [Default]
|     |     |      - on
|     |     |      - on, using supervision signal (720)
|     |     |   * Hall door monitoring 1..127
|     |     |   * Safety barrier monitoring
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Safety circuit bypass monitoring
|     |     |      - off
|     |     |      - on, stop immediately
|     |     |      - on, stop immediately blocked [Default]
|     |     |   * Separating door monitoring (430)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Door sill monitoring (17)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Passive safety circuit monitoring
|     |     |      - on, lift blocked [Default]
|     |     |      - on, Without blocking
|     |     |   * Emergency call unit ready signal monitoring
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Trigger for driving monitoring
|     |     |      - Floor selector impulse [Default]
|     |     |      - Distance covered
|     |     |
|     |     +- Emergency power
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on using enable signal
|     |     |      - on without enable signal
|     |     |   * Unlock disabled floors
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Emergency supply journey delay
|     |     |      off/1..255 [off] s
|     |     |   * Cancel remote off
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Activate drives 2. parameter set
```

```
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Max. Evacuation velocity
|     |     |      - V0 (Creeping velocity)
|     |     |      - V1
|     |     |   * Evacuation direction
|     |     |      - none [Default]
|     |     |      - up
|     |     |      - down
|     |     |      - Set direction by using full load limit
|     |     |   * Doors at fire emergency power floor
|     |     |      - Standard
|     |     |      - Remains closed
|     |     |      - Remains open [Default]
|     |     |      - Opens and closes
|     |     |   * Re-levelling on emergency power operation
|     |     |      - on [Default]
|     |     |      - off
|     |     |   * Travel on UPS-operation
|     |     |      - to the next floor [Default]
|     |     |      - to the em.power floor using drive
|     |     |      - to the em.power floor not using drive
|     |     |   * Ignore light supply on emergency power operation
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Emergency stop on activating emergency power (121)
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Fire alarm
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on
|     |     |      - on, with reset signal (342)
|     |     |   * Fire detector count
|     |     |      none/1..16 [0]
|     |     |   * Send an idle lift to the fire alarm floor
|     |     |      - on [Default]
|     |     |      - off
|     |     |   * Enable door open button
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Pass smoke filled floors
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Unlock disabled floors
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Cancel remote off
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Activation
|     |     |      - By fire alarm (124/474) [Default]
|     |     |      - By fire detector (301..30x)
|     |     |   * Doors at fire alarm return floor
|     |     |      - Standard
|     |     |      - Remains closed
|     |     |      - Remains open [Default]
|     |     |      - Opens and closes
|     |     |   * Secondary fire alarm (474) signal used
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Fire service
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on, fire recall and service
|     |     |      - on, fire recall only
|     |     |      - on, fire recall or service
|     |     |      - on, fire recall only and auto service
|     |     |      - on, fire service only
|     |     |   * Fire recall with reset signal (342)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Return to fire recall floor, if service (126) off
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Turn off fire service without returning to the fire recall floor
|     |     |      - off [Default]
|     |     |      - on
```

```
|     |     |   * Unlock disabled floors
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Ignore overload on fire service
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Cancel remote off
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Doors
|     |     |      - Peep door function [Default]
|     |     |      - Normal operation
|     |     |   * Homing the car by turning off/on the fire recall (125) key within 5 s
|     |     |      - on [Default]
|     |     |      - off
|     |     |   * Car calls need constant pressure
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Close doors manually using the close-door button
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Disable upper floor
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Use alternate fire recall (475)
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Emergency rescue
|     |     |   * Emergency rescue
|     |     |      - manually only [Default]
|     |     |      - automatic and manual
|     |     |
|     |     +- Attendant service
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Adopt attendant service operation from lift group
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Map hall call acknowledges on car call acknowledges
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Access zones
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Zone preselection via impulse at the door table inputs (80, 380)
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Zone preselection floor
|     |     |      off/1..16 [off]
|     |     |
|     |     +- Group
|     |     |   * Park mode
|     |     |      - Fixed [Default]
|     |     |      - Zoning
|     |     |      - Lobby
|     |     |   * Number of lobby cars parked
|     |     |      none/1..8 [0]
|     |     |   * Door opening on hall call
|     |     |      - Open one car per floor only
|     |     |      - Open one car per landing call [Default]
|     |     |      - Open all cars on the floor
|     |     |   * Multiple priority calls per floor
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Penalty for car at lobby floor
|     |     |      off/1..5 [1]
|     |     |   * Penalty for lift parked
|     |     |      off/1..5 [1]
|     |     |   * Penalty for Blue Modus C
|     |     |      1..15 [8]
|     |     |   * Penalty for Blue Modus B
|     |     |      1..31 [16]
|     |     |   * Penalty for idle lift
|     |     |      off/1..5 [3]
|     |     |   * Penalty for car call stopping
|     |     |      1..16 [8]
```

```
|     |     |   * Distance to floor factor
|     |     |      1..4 [1]
|     |     |   * Penalty for directional change
|     |     |      off/1..4 [2]
|     |     |   * Send group settings to all active group members
|     |     |      - off [Default]
|     |     |      - Execute
|     |     |
|     |     +- Guest Calls
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on, send lift by car call only
|     |     |      - on, send lift by hold time expired
|     |     |      - on, send lift by car call or hold time expired
|     |     |      - on, send lift by enable signal only
|     |     |      - on, send lift by enable signal or hold time expired
|     |     |   * Allow entering of new car calls while waiting to proceed guest calls
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Landing calls on guest operation
|     |     |      - collective [Default]
|     |     |      - cancel
|     |     |   * Start to pickup floor on no-load if doors closed
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Clear car calls if guest operation is activated
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Key switch
|     |     |   * Key switch 1 bistable
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Key switch 2 bistable
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Key switch 3 bistable
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Key switch 4 bistable
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Handicapped access
|     |     |   * Handicapped accessible calls
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Chemical Operation
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on, on-neutral-off key switch 3-state
|     |     |      - on, key-button/card reader on landings
|     |     |      - on, activation in the car
|     |     |
|     |     +- Earth quake evacuation operation
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Unlock disabled floors
|     |     |      - off
|     |     |      - on [Default]
|     |     |   * Cancel remote off
|     |     |      - off [Default]
|     |     |      - on
|     |     |   * Evacuate an idle lift too
|     |     |      - off [Default]
|     |     |      - on
|     |     |
|     |     +- Docking service
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on, type 1 simple docking operation
|     |     |      - on, type 2 underfloor lift
|     |     |   * Docking service position range
|     |     |      50..4000 [500] mm
|     |     |   * Generic docking service velocity
|     |     |      - V0 (Creeping velocity) [Default]
|     |     |      - V1
|     |     |      - V2
```

```
|     |     |      - V3
|     |     |      - V4
|     |     |      - V5
|     |     |      - V6
|     |     |      - V7
|     |     |      - VN (Releveling velocity)
|     |     |      - VI (Inspection velocity)
|     |     |      - VR (Emerg. rescue velocity)
|     |     |   * Velocity docking service floor 1..8
|     |     |      - V0 (Creeping velocity) [Default]
|     |     |      - V1
|     |     |      - V2
|     |     |      - V3
|     |     |      - V4
|     |     |      - V5
|     |     |      - V6
|     |     |      - V7
|     |     |      - VN (Releveling velocity)
|     |     |      - VI (Inspection velocity)
|     |     |      - VR (Emerg. rescue velocity)
|     |     |
|     |     +- Automobile Lift
|     |     |   * Function
|     |     |      - off [Default]
|     |     |      - on, signal lights "Forward-Stop-Back-Drive Out"
|     |     |      - on, signal lights "Red-Green"
|     |     |
|     |     +- Special functions
|     |         * Car preference with car doors open
|     |            - off [Default]
|     |            - on
|     |         * Code input
|     |            - off [Default]
|     |            - on, triggered by pressing a disabled car call
|     |            - on, triggered by activation signal (696)
|     |         * Code input, number of digits
|     |            1..10 [4]
|     |         * Door side alternate locked call processing
|     |            - off [Default]
|     |            - on
|     |         * Shuttle between top/bottom using the bottom car call
|     |            - off [Default]
|     |            - on
|     |         * Above the lobby, use only empty cars for landing calls
|     |            - off [Default]
|     |            - on
|     |         * Door open button acts on last door opened by call
|     |            - off [Default]
|     |            - on
|     |         * Hold car preference/VIP (84) signal, as long car calls are pending
|     |            - off [Default]
|     |            - on
|     |         * Car allocation remains active as long as allocation time is not expired
|     |            - off [Default]
|     |            - on
|     |
|     +- Floor Selector
|     |    * Direction of correction run
|     |       - Bottom floor [Default]
|     |       - Top floor
|     |    * Extended Level monitoring (224)
|     |       - off [Default]
|     |       - on
|     |    * Relevelling with separate switches
|     |       - off [Default]
|     |       - on
|     |    * Pre-limit switches (S81/S82)
|     |       - off [Default]
|     |       - on
|     |    * APS offset correction
|     |       - off [Default]
|     |       - top
|     |       - bottom
|     |       - top and bottom
|     |       - zone
|     |    * Rotation sense monitoring
|     |       - on [Default]
|     |       - on, lift blocked
|     |
|     +- Drive unit
```

```
|         |
|         +- General
|         |   * Drive with integrated contactors
|         |      - off [Default]
|         |      - on
|         |   * Enable of drive control (693)
|         |      - off [Default]
|         |      - Up
|         |      - Down
|         |      - No direction
|         |   * Enable of drive control (693)
|         |      - off [Default]
|         |      - Up
|         |      - Down
|         |      - No direction
|         |   * Fast start while doors are closing
|         |      - off [Default]
|         |      - on
|         |   * Contactor release check (33)
|         |      - off
|         |      - on
|         |      - on, lift blocked [Default]
|         |   * Contactor release check separate relevelling unit
|         |      - off [Default]
|         |      - on
|         |   * Drive unit monitoring with blocking mode
|         |      - off [Default]
|         |      - on
|         |   * Drive unit monitoring with blocking mode
|         |      - off [Default]
|         |      - on
|         |   * Drive unit monitoring (34)
|         |      - off [Default]
|         |      - on
|         |      - on, lift blocked
|         |   * Drive unit monitoring (34)
|         |      - off [Default]
|         |      - on
|         |      - on, lift blocked
|         |   * Drive unit monitoring with blocking mode
|         |      - off [Default]
|         |      - on
|         |   * Ignore drive unit status on Blue Modus
|         |      - off [Default]
|         |      - on
|         |   * Brake monitoring
|         |      - off [Default]
|         |      - Using 1 switch
|         |      - Using 2 switches
|         |      - Using 3 switches
|         |      - Using 4 switches
|         |   * Brake monitoring with blocking mode
|         |      - off [Default]
|         |      - on
|         |   * Safety brake monitoring (330)
|         |      - off [Default]
|         |      - on
|         |      - on, lift blocked
|         |   * Rope brake monitoring (451)
|         |      - off [Default]
|         |      - on
|         |      - on, lift blocked
|         |   * Brake test monitoring (691)
|         |      - off [Default]
|         |      - on
|         |   * Motor thermistor monitoring (450)
|         |      - off
|         |      - on, stop at floor [Default]
|         |      - on, immediately
|         |      - on, blocked mode at floor
|         |      - on, blocked mode immediately
|         |   * Phase monitoring (54)
|         |      - off
|         |      - on, stop at floor
|         |      - on, immediately [Default]
|         |      - on, blocked mode at floor
|         |      - on, blocked mode immediately
|         |   * Overpressure monitoring (50)
|         |      - off
|         |      - on, stop immediately [Default]
```

```
|         |      - on, stop immediately blocked
|         |   * Low pressure monitoring (51)
|         |      - off [Default]
|         |      - on, stop immediately
|         |      - on, stop immediately blocked
|         |   * Safety valve monitoring 2 UCM/A3
|         |      - off [Default]
|         |      - on
|         |   * Inspection speed
|         |      - Slow [Default]
|         |      - Fast
|         |   * Transmit mode
|         |      - event-driven [Default]
|         |      - Cyclic
|         |
|         +- Relevelling
|         |   * Relevelling
|         |      - off [Default]
|         |      - on
|         |   * Max. number relevelling per floor
|         |      1..20/Unlimited [10]
|         |   * Monitor the door cam lock (19) sig. if releveling
|         |      - on [Default]
|         |      - off
|         |   * Re-leveling only, if doors closed
|         |      - off [Default]
|         |      - on
|         |   * Signal Destination pending (153) while relevelling
|         |      - off [Default]
|         |      - on
|         |
|         +- Drop protection
|         |   * Drop protection
|         |      - off [Default]
|         |      - on
|         |   * Drop protection on inspection operation
|         |      - on [Default]
|         |      - off
|         |   * Drop protection optionally used for UCM protection
|         |      - off [Default]
|         |      - on
|         |   * Hold drop protection activated
|         |      - off [Default]
|         |      - on
|         |
|         +- Pawl device
|             * Pawl device
|                - off [Default]
|                - on
|             * Car seated using level signal
|                - off [Default]
|                - on
|             * Pawl device lifting/lowering tries
|                1..10 [3]
|             * Car seated using fine adjustment unit
|                - off [Default]
|                - on
|             * Door lock rule, if pawl device is not extended
|                - Unlock the door immediately
|                - Unlock the door delayed by 45 min [Default]
|
+- Tripcnt/hours meter
|   * Trip counter (SRAM)
|      0..4294967295 [0]
|   * Hour meter (SRAM)
|      0.0..429496729.5 [0.0] h
|   * Direction change counter (SRAM)
|      0..4294967295 [0]
|   * Direction change count flex limit advance warning
|      off/1..4294967295 [off]
|   * Block lift on direction change count flex renew
|      off/1..4294967295 [off]
|
+- Date/Time
|
+- Sundries
     |
     +- Access codes
     |   * Setup code
     |   * Service code
```

```
|   * Info code
|   * RD code (Monitoring code)
|   * Code for Tests
|
+- Various numbers
|   * Lift number
|   * Controller number
|   * RD-number (Monitoring id)
|   * Phone number 1
|   * Phone number 2
|   * Phone number 3
|   * Phone number 4
|   * Phone number 5
|   * Phone number 6
|   * Phone number 7
|   * Phone number 8
|   * Company logo
|
+- System data
     |
     +- Print system data
     |
     +- Print menu tree
     |
     +- Save parameters
     |
     +- Load parameters
     |
     +- Load factory default
     |
     +- Save factory default
     |
     +- Default settings
```

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